

FP

PLUS GEORGE PACKER ON THE NEW WORLD DISORDER
BILL MCKIBBEN ON EARTH'S MOST IMPORTANT QUESTION
GILLIAN TETT ON THE INEQUALITY OBSESSION

A WORLD DISRUPTED

THE LEADING GLOBAL THINKERS OF 2014

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ENDURING FORCE

A night photograph of a military base. In the foreground, the silhouette of a large aircraft, possibly a B-52, is visible against a bright, glowing ground effect. The aircraft has several windows with blue light visible. In the background, the dark shapes of buildings and other aircraft are silhouetted against the night sky, which is filled with numerous stars.

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Disruption, But Not Despair

Un bien pour un mal, goes the French phrase—a blessing in disguise, or good that comes cloaked in bad. This year, when morning headlines proclaimed doom and disaster day after day, it began to feel routine to hope, fiercely, for just that: a grace that would emerge from the evil and destruction afflicting the world.

In late winter, a revanchist Moscow laid claim to Crimea, setting off months of violent, pro-Russian separatism on Europe's eastern periphery, leaving more than 3,600 dead and hundreds of thousands displaced. In April, the terrorist group Boko Haram, which had been wreaking murderous havoc and gaining ground in northern Nigeria, kidnapped more than 200 schoolgirls from the town of Chibok and vowed to kill or enslave them. Then emerged the Islamic State, an army of thousands that poured out of northern Syria into Iraq, leaving a trail of death and wanton bloodshed. Add to these events an Ebola epidemic that has ravaged the fragile states of West Africa, racial tensions in the American heartland, the hottest year on record for the planet, and you have 2014.

So when it came time for FOREIGN POLICY to put together its annual list of 100 Leading Global Thinkers, our opening category was clear, albeit sobering: the Agitators of a World Disrupted, as we have named them. They include Russian President Vladimir Putin, Islamic State leader Abu Bakr al-Baghdadi, Boko Haram chief Abubakar Shekau, and others whose ideas and actions have rocked the foundations of geopolitical order. As author and journalist George Packer writes in his essay in this issue, above all these actors have “revealed the waning of America’s ability to control events—not just its willingness and ability to project force, but the attractive power of liberal democracy as a counterweight to authoritarianism and extremism.”

Yet the message in this issue is not one of despair. Take

our cover image, a Molotov cocktail in mid-explosion. It's a metaphor for violence, certainly, but also one for defiance, for resistance, for unleashing the startlingly new. The image, like the majority of Global Thinkers on our list, is a reminder that change can start at any second: change that is destructive, beautiful, inspirational—sometimes all at once.

The history books might remember this year as one in which people sowed chaos and fear. But it was also a year when health workers risked their lives to save thousands of strangers in West Africa, when protesters took to the streets demanding government reform from Hong Kong to Caracas, when innovators worked to ensure a nuclear-zero world. Others, as environmentalist and author Bill McKibben notes in his essay, galvanized grassroots movements to guard humanity from approaching environmental calamity. Artists' explosive creativity, meanwhile, offered new visions of the past, present, and future, and advocates supported civilians caught in the cross-hairs of war with boldness and determination rivaling in strength even the megalomania of the agitators. Add to this businessmen and businesswomen who are reinvigorating

marketplaces and chroniclers telling the most important stories of our time in pioneering ways, and you have 2014.

Disruption, clearly, is not always a bad thing.

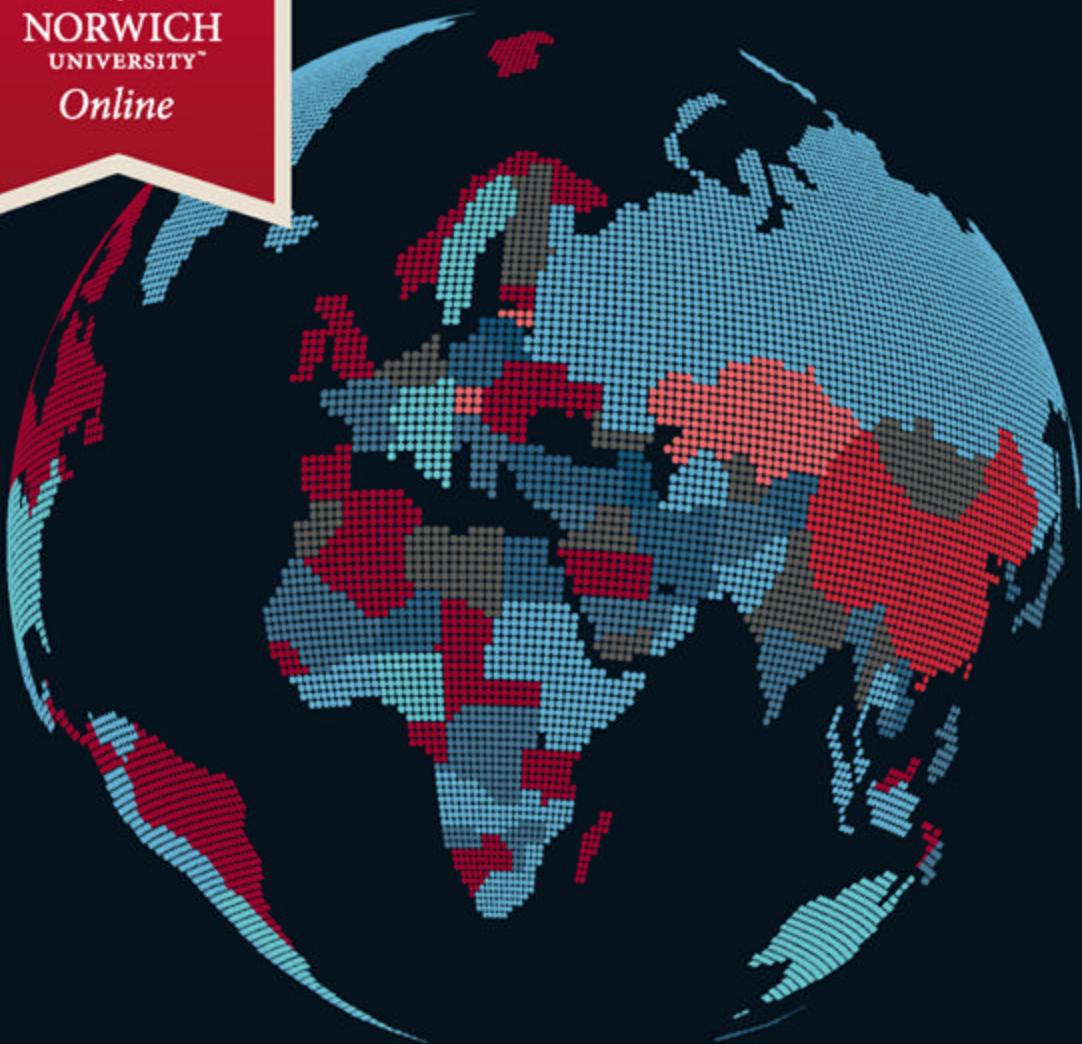
In this tumultuous year, FP's Global Thinkers are individuals who shook the world as we knew it. And, in doing so, many of them have helped build a far better one.

—The Editors





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The 2014 Leading Global Thinkers



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—MARCEL CHRIST

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GEORGE PACKER
is a staff writer for the *New Yorker* and the author of the 2013 National

Book Award-winning *The Unwinding: An Inner History of the New America*. In his reporting, Packer has covered the Iraq War, atrocities committed in Sierra Leone, civil unrest in Ivory Coast, and counterinsurgency worldwide. | P. 52



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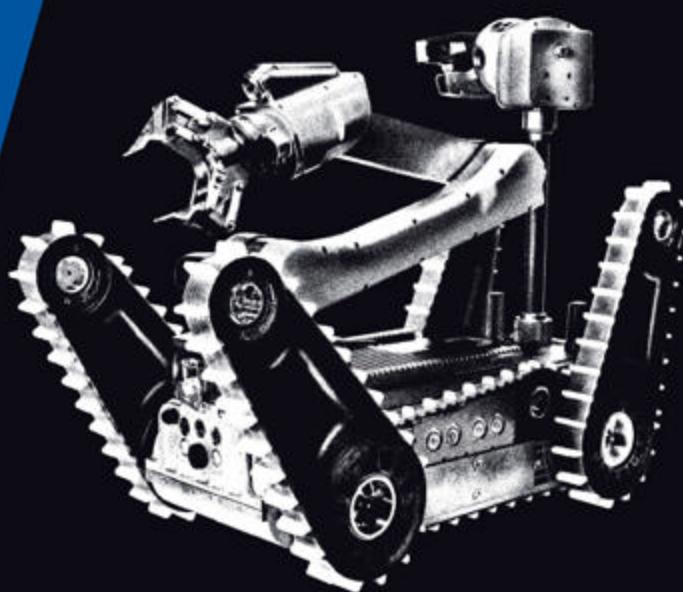
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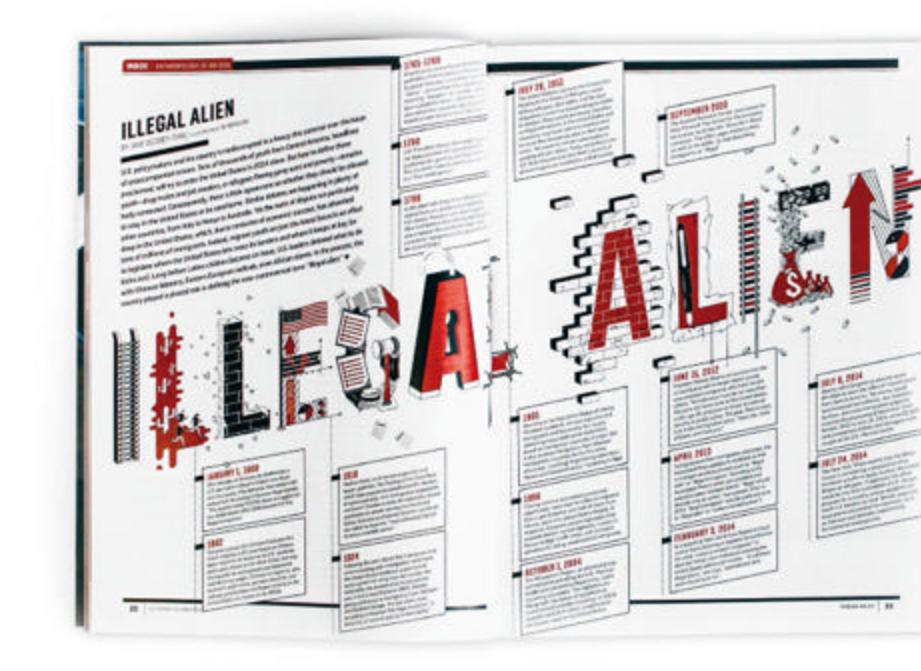
'Needless Euphemisms'

Polemicists, politicians, and tyrants have long understood that language does not just express ideas; it also shapes ideas and influences the way people think. Nowhere is the manipulation of language and perception more evident than in the contemporary debate about immigration policy. As Jake Scobey-Thal ("Anthropology of an Idea: Illegal Alien," September/October 2014) illustrates, the battle over terminology pertaining to immigration can be as heated as the policy debate itself.

If proponents of open immigration and amnesty for illegal aliens (there, I used the term) are to achieve their political ends, they must first control the language of the debate. They must create the false impression in the minds of the American people that violation of U.S. immigration laws is, at minimum, a completely innocuous act, and perhaps even noble. Rather than lawbreakers, the people who settle in the United States illegally must be defined in euphemistic terms that obfuscate both their deeds and their impact on the people whom U.S. laws are meant to protect.

These laws are clearly meant to safeguard U.S. citizens' vital interests: economic, social, and national security, among others. While it may be in the interest of foreigners to immigrate, and while immigration may also serve some narrow domestic political and economic interests, excessive inflows of illegal aliens can inflict significant harm on American workers and taxpayers.

The use of the term "illegal alien" clearly and accurately describes people who are living



in the United States without legal authorization. 8 U.S. Code § 1101 defines an alien as "any person not a citizen or national of the United States." An illegal alien is a foreign national who is in a country in violation of U.S. law.

"Illegal alien" is not a derogatory term. As *A Dictionary of Modern Legal Usage* notes, "[I]llegal alien is not an opprobrious epithet; it describes one present in a country in violation of the immigration laws (hence 'illegal')." The dictionary also goes one step further, condemning the use of terms such as "undocumented worker" as "needless euphemisms" that "should be avoided as near-gobbledygook."

Euphemism and near-gobbledygook are precisely the objectives of those trying to create the impression that taking up residence in the United States illegally is on par with forgetting to put a quarter in the parking

meter. Perhaps the most chilling example of the effort to manipulate the language of the debate is the recent publication and distribution of the "Media-Friendly Glossary on Migration"; funded by George Soros's Open Society Foundations in collaboration with an obscure U.N. agency, the Alliance of Civilizations, it amounts to nothing less than a frontal assault on clear language.

If there is to be actual reform of U.S. immigration policies that truly serve the interests of the American people, then the current debate must be framed using sharp but respectful language. Illegal aliens are not inherently bad people, but they are foreign nationals who have no legal right to be in America. They should be defined accurately.

DAN STEIN
President, Federation for
American Immigration
Reform, Washington, D.C.

Solid Foundation

The White House's rhetoric during President Barack Obama's first term suggested he wanted to be more engaged and more transformative internationally than any U.S. president since John F. Kennedy. Expectations, then, were high. Consequently, Obama set himself up for the criticism—offered so eloquently by David Rothkopf ("National Insecurity," September/October 2014)—that, in practice, his foreign policy has been marred by a lack of interest.

It is true that the president's policy toward the broader Middle East, as well as al Qaeda and its affiliates, is in serious trouble. He neglected Syria for three years, and now the Islamic State chickens have come home to roost. In Iraq, his unwillingness to put some special forces and military

advisory teams on the ground with Iraqi Army units will probably need to be reassessed. In Libya, Obama's main failing is not his handling of the Benghazi attack per se, but the hands-off approach the United States has taken to helping the country get back on its feet since the overthrow of Muammar al-Qaddafi. In addition, the president's overall rhetoric about the need for minimalism and retrenchment in U.S. foreign policy, while apparently what voters want at one level, is not actually what they expect from their commander in chief—and it is not adequate to the task at hand.

Yet the allegations of weakness and irresoluteness now being made against the president are, to my mind, badly wrong. On most of the big issues, his policies are at least pointing in the right general direction, even if, in some cases, they are in need of refinement and reinvigoration.

On Ukraine and Russia, Obama rightly began the U.S. response with mild sanctions over the Crimea issue. He avoided pursuit of immediate escalation, in both military and economic terms, which European allies would not have supported in any event, and rightly focused on deterrence of even more egregious action by Moscow in eastern Ukraine. It is much too early to declare success, but the current situation looks far more promising than it did just a few months ago.

On China (and North Korea), Obama's April trip to the region restored some momentum to his "rebalance" policy. This policy is not overly muscular, but that is correct for a situation in which the United States should be demonstrating resolve while also seeking to reassure and cooperate with Beijing, something James Steinberg and I argue in our new book,

Strategic Reassurance and Resolve: U.S.-China Relations in the Twenty-First Century.

On Iran, building on President George W. Bush's legacy, Obama has patiently put together progressively stronger sanctions using creative formal and informal means, establishing the conditions that gave rise to President Hassan Rouhani's election there. These conditions now give at least some hope for a negotiated settlement over the nuclear issue. And if force does prove a necessary last resort, few will be able to say that Obama invoked the military option too soon.

Add it up, and it is a decent grand strategy at the broad level, even if it has serious shortcomings with regard to the Middle East. The president still needs, as Rothkopf wrote, to save himself. But this saving is less from a disaster than from a foreign policy that has lost

THE PRESIDENT STILL NEEDS, AS ROTHKOPF WROTE, TO SAVE HIMSELF. BUT THIS SAVING IS LESS FROM A DISASTER THAN FROM A FOREIGN POLICY THAT HAS LOST SOME OF THE ENERGY AND FOCUS OF EARLIER TIMES.

some of the energy and focus of earlier times. The needed repair work is more akin to carpentry than to wholesale construction of a new edifice.

MICHAEL O'HANLON
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I understand that anyone that furnishes false or misleading information on this form or who omits material or information requested on this form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties). Christopher Cotonoir, September 28th 2014.

NIGERIA

Fast Growth; Big Problems

No other emerging market offers the potential of Nigeria. Projected to have the world's fourth-largest population by 2040 and to become an economic leader by the mid-21st century, the oil-rich nation is trying to improve governance and modernize its economy. But its challenges are immense—not least the corruption, oil theft, poverty, and a brutal insurgency.

The International Monetary Fund (IMF) predicts that Nigeria's economy will grow by 7 percent this year and by slightly more next year; then it will ease to 6.8 percent by 2019. But what's really exciting is where this prolonged expansion path could lead—if Nigeria's problems can be overcome. By the middle of this century, according to projections by Goldman Sachs, Nigeria could boast the world's 13th-largest economy, right behind France and Germany. Moody's puts Nigeria in the top 15 within the same time frame, up from 28th place now. Former Goldman economist Jim O'Neill includes Nigeria in a select group of "MINTs" along with Mexico, Indonesia, and Turkey—four large emerging economies that all have "very favorable demographics for at least the next 20 years, and their economic prospects are interesting," O'Neill wrote.

"I am especially excited about Nigeria because of it being nearly 20 percent of Africa's population, and if they find success it will be really important for the African continent," O'Neill told Grant Thornton, a consultancy, in March. "I also think they have a generation of leaders that are trying to behave differently from the past in terms of stronger and better governance. In a broader context, I am among those that believe this could be sub-Saharan Africa's 'moment,' so to speak, as with the benefits of modern technology, the better governance, and with improving infrastructure, it looks quite promising."

The IMF does not project so far ahead, but it is quite positive about the near-term outlook. "Structural reforms under the Transformation Agenda are ongoing," the fund noted in its April 2014 country report. "Growth is expected to remain strong, driven by agriculture, trade, and services." However, it cautioned that "significant in-

policies while boosting public and private investment. A year later, he launched the Transformation Agenda, with an emphasis on bringing private investment into oil, gas and power.

"Nigeria's development efforts have over the years been characterized by lack of continuity, consistency and commit-

ment (3Cs) to agreed policies, programs and projects as well as an absence of a long-term perspective," read the agenda. "The culminating effect has been growth and development of the Nigerian economy without a concomitant improvement in the overall welfare of Nigerian citizens. Disregard to these 3Cs has resulted in rising unemployment, inequality and poverty."

Since then, Nigeria has privatized much of the power sector (see the infographic on the following pages), and essential investments are starting to flow. Recent pension reforms, in addition to a gradual easing of some old-age poverty, may help steer local funds into infrastructure. Inflation is under control, bureaucracy is improving, and welfare reforms are promised.

Small steps, perhaps, but in the right direction.

Most of the reforms have so far benefited the more developed and peaceful south of the country, doing little to help the underdeveloped northern region, where violence from Boko Haram feeds on poverty and systemic corruption.

The Lessons of Ebola

Often criticized for its corruption, social problems, and inefficiency, Nigeria showed the world a dramatically different face dur-



frastructure gaps and weak institutional capacity still retard growth prospects."

A Long Road Ahead

Dealing with generational legacy issues is rarely quick or easy, and Nigeria is not without its share of problems, many of which dominate international press reports about the country. President Goodluck Jonathan, who holds a doctorate in zoology from the University of Port Harcourt, took office in May 2010, seeking to implement conservative economic

ing its recent brush with Ebola. Rapid response, well-organized public officials, dedicated health workers, and good preparations helped prevent the virus escaping into the densely packed shantytowns of Lagos, one of the world's largest metropolitan areas with a population of 21 million.

"Nigeria is now free of Ebola," Rui Gama Vaz of the World Health Organization told reporters in Abuja, the capital. "This is a spectacular success story." Vaz was speaking in late October, just three months after Patrick Sawyer, a Liberian-American, landed in Lagos with symptoms of fever, diarrhea, and vomiting.

Eight deaths later, Nigeria is celebrating the dedication of Dr. Stella Ameyo Adadevoh, who—according to reports—refused to believe Sawyer's denial of any exposure to Ebola, physically restrained him in his hospital bed, and resisted official pressure to discharge him. This dedication cost Adadevoh her life.

Nigeria was perhaps lucky that Sawyer arrived with visible symptoms. But after

some early mistakes and initial hesitation, the government rapidly adapted an emergency-operations center that had been established earlier with foreign aid to fight polio. This provided unified command and enabled contact tracing. The widespread mobile phone network was crucial, as was the existing Lagos hospital and ambulance system, which is much better than in many other parts of the country, and indeed most of sub-Saharan Africa. Some 1,800 health workers were quickly trained and 900 possible contacts were traced and monitored in more than 18,000 visits.

"Nigeria acted quickly and early and on a large scale," John Verteefeuille, an epidemiologist with the U.S. Centers for Disease Control and Prevention who spent time in the country, told reporters. "Tracing was central to the success of the response."

Critics noted that the Ebola response contrasted sharply with the government's lethargic and so-far-ineffective handling of the April kidnapping of more than 200 schoolgirls by the Boko Haram militant group.



Q&A
H.E. Chinedu
Ositadinma
Nebo
Minister of Power

How does power privatization fit into the Transformation Agenda?

Nigeria has conducted the largest privatization of public utilities in Africa—a model for other countries. But it wasn't just the government handing over the power sector; privatization was the realization that government alone could not continue to run the power sector as a matter of social welfare. Government did not have the funds, and it needed to give Nigerians the level and quality of power supply that they clamor for.

What motivates you, as Nigeria's minister of power?

Power is the key to unlocking Nigeria's potential, in industry, manufacturing, and SMEs [small and medium enterprises]. Without power, none of this is possible. In the past, some companies even left Nigeria because of inadequate power supplies. I see myself in a historic position to help address that huge vacuum. The government is committed to taking electricity to the most distant rural populations.

Technology for Growth



Peter Jack
Director General, NITDA

NIGERIA'S NATIONAL INFORMATION TECHNOLOGY DEVELOPMENT AGENCY (NITDA) LIES AT THE VERY HEART OF THE COUNTRY'S GROWTH STRATEGY. DIGITAL TECHNOLOGY MEANS BETTER JOBS AND HIGHER SALARIES; IT ALSO MEANS LEAPFROGGING MANY TRADITIONAL STAGES OF DEVELOPMENT WITH A MIX OF IMPORTED AND HOMEGROWN PROGRAMS AND PLATFORMS. SOME US\$25 BILLION OF LOCAL AND FOREIGN INVESTMENT COULD BE NEEDED OVER THE NEXT FIVE TO TEN YEARS TO BUILD OUT INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) INFRASTRUCTURE.

Peter Jack is nothing if not ambitious: he sees Nigeria's ICT sector possibly rivaling oil and gas as a generator of gross domestic product. Jack, a postgraduate chemical engineer with an MBA from the University of Lagos, was recently appointed director-general of NITDA with a mandate to get things moving.

"We plan to position NITDA as a prime catalyst for transformation," Jack said in an interview. "We are going to engage with all sectors; our principal strategy is stakeholder partnerships. We are going to position ICT as a credible economic sector, possibly surpassing oil and gas in the future. And we plan to use ICT to catalyze growth in other sectors, to be an enabler in sectors such as oil and gas, agriculture, industry, housing, and so on." ICT currently generates an estimated 9 percent of Nigerian GDP. Created in 2001, NITDA is charged with promoting ICT development by drawing up standards, fostering e-government, fostering ICT training, and sponsoring infrastructure development, particularly in rural



areas. Jack, who studied information technology policy at Seoul National University in South Korea, sees that Asian nation as a potential role model: "In 1997, after the Asian financial crisis, South Korea adopted an ICT-focused economic development strategy and successfully positioned ICT as a 25 percent contributor to GDP."

Omobola Johnson, Nigeria's minister of communication technology, is equally optimistic. More people in Nigeria have mobile phones than have a bank account, she points out, meaning that the potential for going straight to mobile financial services is huge. Currently about 28 percent of Nigerians have some Internet access, but broadband penetration, counting mobile and fixed, is just over 6 percent. However, around 75 percent of people

have mobile phones that use the older GSM-2G technology and cannot access the Internet. Now the challenge is to extend networks further into poorly served rural areas and upgrade the whole system to 3G or even 4G technology to allow for services such as mobile banking.

Nigeria recently announced that it would license seven infrastructure companies to expand broadband networks and adopt an open-access policy whereby carriers will be required to lease network space to competitors. The government's National Broadband Plan 2013–2018 quotes studies showing that "every 10 percent increase in broadband penetration in developing countries results in a commensurate increase of 1.3 percent in GDP." 3G coverage is due to reach 80 percent of urban areas by 2018, with a minimum speed of 1.5 Mbit/second. Subscribers would multiply fivefold, to around 30 percent of the national population. Jack said he hopes to create 600,000 ICT-related entrepreneurs and two million jobs during his four-year term at NITDA.

NIGERIAN POWER SECTOR

FINANCING

US\$7bn/5yrs

President Obama's Power Africa initiative aims to double the number of Africans who have access to electricity

US\$4.68 bn

Total investment portfolio of Nigerian banks in the power sector (Dec. 2013)

US\$5bn p.a.

Yearly funding needs for power sector over the next five years

US\$700 m

UBA line of credit for acquisition of power assets in the recently privatized power sector

US\$550 m

Amount the federal government provided to its sovereign wealth fund to help guarantee power trading and spur investments to build the country's electricity market

The National Council on Privatization (NCP) constitutes the Electricity Power Sector Implementation Committee (EPIC) to undertake a comprehensive study and review of the entire industry to prepare grounds for liberalizing the power sector to attract private investment and ensure competition in the market.

Enactment of the Electricity Power Sector Reform Act (EPSRA) provides legal backing for the power sector reform program. EPSRA calls for unbundling the national power utility company into 18 successor companies; 6 generation companies; 11 distribution companies (discos) covering all 36 states; and one national power transmission company (TCN), all under the umbrella of the Power Holding Company of Nigeria (PHCN).

POWER GENERATION CAPACITY



6,976 MW

total installed generation capacity, with expectation of expansion from the National Integrated Power Projects (NIPPs)

20,000 MW

estimated generation capacity by 2018

GENERATION COMPANIES

600 MW	Shiroro Hydro Power Plc (Hydro)
942 MW	Ughelli Power (Thermal)
987 MW	Afram Power Plc (Thermal)
1,020 MW	Sapele Power Plant (Thermal)
1,320 MW	Egbin Power Plc (Thermal)
1,330 MW	Kainji/Jebba Hydro Electric Plc (Hydro)



INDEPENDENT POWER PRODUCERS

These are power plants owned and managed by the private sector. Note: There were Independent Power Producers (IPPs) present in Nigeria prior to the privatization process.*

*70 licenses issued by NERC to IPPs to improve power in the country.

642 MW Shell - Afam VI

480 MW Agip - Okpai

270 MW AES Barges

NATIONAL INTEGRATED POWER PROJECTS

Conceived in 2004 as a fast-track publicly funded initiative to add significant new generating capacity to Nigeria's electricity supply system, along with the electricity transmission and distribution and natural gas supply infrastructure that is required to deliver the additional capacity to consumers throughout the country.*

1,131 MW Alaoji Generation Company Nigeria Ltd.

508 MW Benin Generation Company Ltd.

634 MW Calabar Generation Company Ltd.

381 MW Egbedore Generation Company Ltd.

254 MW Gbarain Generation Company Ltd.

506 MW Geregu Generation Company Ltd.

508 MW Ogorude Generation Company Ltd.

754 MW Olorunsogo Generation Company Ltd.

265 MW Omoku Generation Company Ltd.

513 MW Omotosho Generation Company Ltd.

* "A Guide to the Nigerian Power Sector", KPMG, December 2013 Pending completion

NATIONAL INTEGRATED POWER PROJECTS

• Kaduna Electricity Distribution Company Plc

• Abuja Electricity Distribution Plc

• Jos Electricity Distribution Plc

• Kano Electricity Distribution Company Plc

• Yola Electricity Distribution Plc

• Enugu Electricity Distribution Plc

• Benin Electricity Distribution Company

• Eko Electricity Distribution Company Plc

• Ikeja Electricity Distribution Company Plc

• Ibadan Electricity Distribution Company Plc

• Port Harcourt Electricity Distribution Company Plc



US\$1 bn

to be invested by the Azura Power Group in the 450 MW Edo-Azura Independent Power Plant project to increase national output



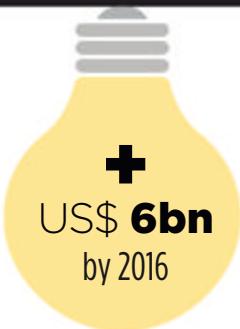
US\$1.3 bn

Deal with the Chinese government that involves construction of a hydroelectric plant in Zungeru (Niger State) and that is expected to add 700 MW to the national grid

1999

2005

2010



ELECTRICITY
MARKET

NIGERIA

Special Advertising Supplement

An Opportunity for Growth

INFRASTRUCTURE REQUIREMENTS

US\$2.9 trn

required for infrastructure development efforts through over the next 30 years in Nigeria (2014-2045)

US\$900 bn

required for the energy sector alone

US\$10 bn

required for capital expenditure by generation and distribution companies in the next few years to enable the nation to add 5,000 MW

US\$1.5 bn

annual requirement over the next five years to ensure reliability and stability of the transmission grid



President Goodluck Jonathan hands over shares certificates and licenses to new owners in September of 2013

This is the auspicious time to invest in power; the Nigerian Government is poised to buy all power generated, through its agency, the Nigeria Bulk Electricity Trader (NBET), also with World Bank backing through the Partial Risk Guarantee (PRG). All power generated will be paid for 100% when produced.

Prof. Chinedu Nebo, Minister of Power



RENEWABLE ENERGY

SOLAR

Average solar insolation
5.25 kWh/m²/day

SOLAR POWER

OPERATION LIGHT UP NIGERIA



The project is conducted in partnership with foreign firms such as Philips and Schneider and aims to provide 24-hour solar-powered energy in all parts of the country.



WIND

Wind speeds range from 1.4 to 3.0 m/s (coastal and offshore) in the south and from 4.0 to 5.1 m/s in the far north

BIO MASS

Government plans sugarcane and cassava plantations for bioethanol production

GEOTHERMAL

Major potential geothermal sites have been identified

HYDRO

22% of electrical power supply
13% of exploitable hydropower in use



US\$100 m

pledged by the World Bank for a development plan in Nigeria to diversify the country's reliance on oil

DECEMBER 2010

The NCP advertises for EOs from prospective core investors interested in acquiring controlling stakes in the 11 successor distribution firms created from PHCN

MARCH 2011

Deadline for submission of EOs;
180 applications received, including
from 72 prequalified bidders.

2011

2012

2013

PRIVATIZATION TIMELINE

OCTOBER 2012

NCP approves 14 preferred bidders for the PHCN's generation and distribution companies. Manitoba Hydro International (MHI) takes charge of TCN in a US\$24.7 million contract expected to run for three years, aiming to reorganize TCN into a market-driven company that is technically, financially and commercially viable.

SEPTEMBER 30th, 2013

President Goodluck Jonathan formally hands over share certificates and licenses to 14 new core owners of PHCN successor companies.

FEBRUARY 2013

The privatization agency sends a request for proposal (RFP) to 48 prospective bidders. Afam and Kaduna discos were among the 17 PHCN successor companies advertised for sale in December 2010 along with 15 other PHCN successor companies that went through a full competitive tender process, culminating in the submission of technical and financial proposals in July 2012.

**More than
US\$3 billion
is generated
through
the bidding**

55%

of total population has access to electricity in Nigeria

75%

of Nigeria's power generation depends on natural gas

US\$8.5 bn

Gas Master Plan

The Federal Government has earmarked US\$8 billion for execution of the Nigerian Gas Master Plan with specific interest in meeting the country's gas-to-power demand.

260 trn ft³

total reserves of natural gas (note that Nigeria's gas reserves are triple the nation's crude oil reserves)

1st in Africa

in proven gas reserves

9th largest

in global reserves



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FEDERAL REPUBLIC OF NIGERIA
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Pictured:
E Is for Egalitarian
P. 18

INBOX

“I found an institution that was under shock.”
P. 26



The
Forgotten
Streets
P. 28

20

ANTHROPOLOGY OF AN IDEA
BIOMIMETICS



22

THE THINGS THEY CARRIED
THE CLIMATE SCIENTIST



24

IDEAS
LORD OF
THE FLIES



26

EPIPHANIES
CHRISTINE
LAGARDE



**banana**

banana

**candidato**

candidate

**ossinho**

bone

**união**

united

**tapa**

slap

**feliz**

happy

**dinheiro**

money

**fogo**

fire

**foguete**

rocket

**barriga**

belly

**tucano**

toucan

**língua**

tongue

INBOX · PICTURED

E IS FOR EGALITARIAN

ARTWORK BY JONATHAS DE ANDRADE

In 1962, Brazilian educator Paulo Freire implemented a radical method for teaching people how to read. Instead of using textbooks, Freire encouraged his pupils—300 adult sugar-cane cutters—to learn from one another by sharing their life experiences. Freire then used the students' working vocabulary as

the building blocks for language lessons. The pedagogy, which rejected the normal hierarchies of the student-teacher relationship, worked. His pupils were literate within weeks, and the initiative soon became a federal program. It didn't last long, though. When the military took power in 1964, Freire was

**mel**

honey

**excesso**

excess

**faca**

knife

**razão**

reason

**atrasado**

late

**saque**

looting

**brasil**

brazil

**colônia**

cologne

**tijolo**

brick

**riqueza**

wealth

**faísca**

sparks

**perdido**

lost

exiled and his program was dismantled.

Among the literacy programs that emerged in its place during the junta years was something much more controlled: commercially published language posters. Sold at newsstands, the prints displayed popular concepts, such as food and

money. This new approach, however, ultimately denied prospective students the agency at the heart of Freire's mission.

It is this history that undergirds Jonathas de Andrade's "Educação para Adultos" ("Education for Adults"), a series of 60 educational posters that combines the science of

linguistics and the art of interpretation in Brazil over the past five decades. In 2010, de Andrade worked with a group of illiterate seamstresses to choose 40 words to be displayed on the prints, co-opting the graphics-based teaching tradition from the military years but imbuing it with Freire's

methods. By carefully juxtaposing 20 government vintage posters into the work, he not only introduced unique and, at times, provocative word combinations to unpack Brazil's recent history—he also provided a sobering commentary on an aspirational pedagogy that had been forgotten. ♦

BIO

1505-1506

Leonardo da Vinci writes *Codex on the Flight of Birds*, which speculates that human air travel could be modeled on the mechanics of avian flight. Over the course of his life, da Vinci produces a number of works and more than 500 sketches dealing with the mechanics of flying and the nature of air.

1851

In London, landscape designer Joseph Paxton builds the 990,000-square-foot Crystal Palace for the Great Exhibition, the first international expo of manufactured products. The palace's unique architecture, which uses crisscrossed iron girders to support nearly 300,000 panes of glass over a vast, open space, is inspired by the leaf of a water lily: Interconnecting ribs help the plant support substantial weight in water.

BIO

1903

In the first-ever successful airplane flight, brothers Orville and Wilbur Wright's craft stays airborne for just under a minute in Kitty Hawk, North Carolina. The Wright brothers' model, particularly the wings' control mechanism, is inspired by the way birds use air currents to gain lift and facilitate changes of direction. Just over a decade later, the world's first commercial passenger flight travels from St. Petersburg, Florida, to Tampa.

1955

Swiss engineer George de Mestral patents Velcro. His idea, however, was hatched years earlier when, during a hunting trip in the Alps, his dog became covered in burs. Inspired by the prickly seeds' tiny hooks, de Mestral envisioned a product: two pieces of fabric, one with hooks, the other with loops. Velcro becomes widely known in the 1960s, when NASA uses it in space shuttles to prevent food, equipment, and other items from floating away in zero gravity.

BIO

1969

American biophysicist Otto Schmitt uses the term "biomimetics" for the first time, in a paper he presents at the International Biophysics Congress in Boston. No stranger to bio-inspired technology, Schmitt had invented an electrical circuit modeled after the neural impulse systems of squids in 1934, when he was a doctoral student. Schmitt's word catches on and, five years later, is adopted into Webster's dictionary.

1986

NASA and 3M test a technology that resembles the grooves found on shark skin. Small indentations called riblets are attached to the outer shell of an aircraft with adhesive to reduce drag in the air and make jets more aerodynamic. Today, Lufthansa is developing technology to "paint" these grooves directly onto commercial aircraft exteriors to lower fuel consumption by about 1 percent. (It may not sound like much, but the savings could yield significant environmental benefits. Annually, the United States alone consumes about 20 billion gallons of aviation fuel.)

1996

Architect Mick Pearce designs the Eastgate Centre in Harare, Zimbabwe. Inspired by self-cooling mounds of African termites, the large office and retail space does not have a conventional heating and cooling system; rather, it uses chimneys that naturally draw in cool air to maintain a temperate environment. According to Pearce, the ventilation system costs one-tenth of that in a comparable, air-conditioned building, and it uses 35 percent less energy.

1997

Scientist and writer Janine Benyus publishes the book *Biomimicry: Innovation Inspired by Nature*. Benyus, now considered the field's chief proselytizer, frames the concept of biomimetics around the urgent goal of ending environmental destruction. "We're able to apply fresh thinking to traditional manufacturing to undo the toxic and energy-intensive mistakes of the past," Benyus tells *National Geographic* years later. "I wish we had been at the design table at the Industrial Revolution."



BY JAKE SCOBAY-THAL
ILLUSTRATION BY ALEX EBEN MEYER

This year, NASA presented three designs for its latest prototype spacesuit, designed to withstand the habitat on Mars. One of the concepts mimicked creatures that thrive in one of the harshest environments here on Earth: the deep sea. The suit replicated the scaly skin and bioluminescence of certain fish. Although the suit eventually lost out to a different model, it showed that nature might offer important keys to unlocking the cosmos. And that's not all: Nature might also help build a better industrial future back home. Human



innovation, some thinking goes, should take cues from naturally occurring processes, because after billions of years of evolution, nature has determined what is efficient, effective, and enduring. This isn't a novel idea. From airplanes to Velcro, inventors have long turned to flora and fauna for inspiration and instruction. But now more than ever, biomimetics is generating product designs—not to mention hundreds of millions of dollars in capital investment—that are not just pioneering, but also potentially sustainable. ♦

2008

Richard Bonser, then of the University of Reading's Centre for Biomimetics, publishes a study in the *Journal of Bionic Engineering* that assesses the growth of biomimetic innovation. Bonser finds that between 1985 and 2005, the number of patents worldwide containing the word "biomimetic" or "bio-inspired" increased by a factor of 93. (The growth factor for non-biomimetic patents was 2.7.)

2008

Engineer and entrepreneur Hansjörg Wyss pledges \$125 million to Harvard University—at the time, the largest single endowment in the university's history—to create the Wyss Institute for Biologically Inspired Engineering. According to a press release, the institute "will strive to uncover the engineering principles that govern living things, and use this knowledge to develop technology solutions for the most pressing health-care and environmental issues facing humanity."



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According to a report on biomimetics, the field is set to explode: By 2025, biomimicry could represent \$300 billion of U.S. GDP annually, 1.6 million jobs, and \$50 billion in terms of resources conserved.



2011

Lynn Reaser, chief economist at Point Loma Nazarene University's Fermanian Business and Economic Institute in San Diego, establishes the Da Vinci Index. Measuring the frequency of biomimetics terms used in scientific journals, patents, and grants, the index aims to quantify the expansion of bio-inspired research and innovation.

According to a report on biomimetics, the field is set to explode: By 2025, biomimicry could represent \$300 billion of U.S. GDP annually, 1.6 million jobs, and \$50 billion in terms of resources conserved.

2010

Janine Benyus co-founds Biomimicry 3.8. The firm, whose name is a reference to 3.8 billion years of natural life, consults for, trains, and educates companies on how to incorporate bio-inspired innovation into their practices. Today, it has worked with more than 250 clients, including Shell, Boeing, and General Electric.

2011

Lynn Reaser, chief economist at Point Loma Nazarene University's Fermanian Business and Economic Institute in San Diego, establishes the Da Vinci Index. Measuring the frequency of biomimetics terms used in scientific journals, patents, and grants, the index aims to quantify the expansion of bio-inspired research and innovation.

According to a report on biomimetics, the field is set to explode: By 2025, biomimicry could represent \$300 billion of U.S. GDP annually, 1.6 million jobs, and \$50 billion in terms of resources conserved.



2012

Boston College undergraduates Deckard Sorenson and Miguel Galvez, founders of NBD Nanotechnologies, produce a proof of concept for a water bottle inspired by the Namib Desert beetle. Like the insect, which draws water from air by collecting condensation on microscopic bumps on its back, the bottle would harvest air moisture; the team estimates the device could store up to 3 liters of drinking water every hour. "If we're creating [several] liters per day in a cost-effective manner," Galvez tells the BBC, "you can get this to a community of people in sub-Saharan Africa and other dry regions of the world."



JANUARY 2014

Harvard scientists and engineers publish a paper in *Nature* introducing a new, metal-free battery that relies on naturally abundant, carbon-based molecules called quinones—similar to those that store energy in animals and plants. Significantly cheaper than the metals normally used in batteries, this technology, the researchers note, could improve the efficacy of renewable energy in large grid systems.

JULY 2014

India's Lavasa Corp. files for an initial public offering, its second attempt in four years, to raise 7.5 billion rupees (over \$100 million) to develop the country's first city based on biomimetic principles. The company has worked closely with biologists to develop the city's master plan, which incorporates reforestation efforts, rainwater harvesting, and green construction practices. If realized, the city could be home to as many as 300,000 people.



THE CLIMATE SCIENTIST

INTERVIEW BY THOMAS STACKPOLE
PHOTOGRAPHS BY BRENDEN NEVILLE

Talk about polar opposites: While Arctic sea ice continues to melt, down in the Antarctic, ice is actually accumulating—and at record levels. Capping off an anomalously high three-year trend, September 2014 saw 7.76 million square miles covered in ice; that's more than 500,000 square miles above the average documented between 1981 and 2010.

Glaciologist Ted Scambos and his colleagues are trying to figure out what, exactly, is happening. A senior research scientist at the National Snow and Ice Data Center, a part of the Cooperative Institute for Research in Environmental Sciences at the University of Colorado, Boulder, Scambos has been tramping around the Antarctic since the 1990s. His trips typically run "eight weeks, door to door," he says, which means two to three weeks on the ice collecting samples and deploying ground-penetrating radar and other technologies to determine how the ice is changing. He and his crew work in temperatures that dip to minus 40 degrees Fahrenheit, but after a few days in the cold, he says, "you can enjoy a beer outside of your tent on a sunny day, no problem."

Despite this year's good news about ice, Scambos notes that people shouldn't assume the Antarctic is in great shape. In 2002, a Rhode Island-sized piece of the Larsen B ice shelf—a 720-foot-thick plate on the eastern side of the Antarctic Peninsula—disintegrated when ponds of meltwater caused a sudden breakup within five weeks. Now more ice is expected to disappear: This year, two studies posited that the collapse of the Amundsen Sea ice sheet in the western Antarctic appears inevitable—and that it might raise global sea levels by some 4 feet.

Scambos says it can be a struggle to communicate the urgency of his work, which is highly detailed and done in a faraway, isolated place. And yet, he adds, minds are slowly changing. "People do think, 'You know, 50 years from now, we won't have any water left for California; or '50 years from now there will be no forest.' There's no technological solution other than conservation and careful planning."

Scambos's next big trip likely will be to a ridge on the East Antarctic Plateau, thought to be the coldest place on Earth. FOREIGN POLICY recently caught up with Scambos to learn what is required to live and work at the bottom of the world. ♦

Malå Geoscience ground-penetrating radar

The box with the phone cord has a recording device, and the other box has the connection to the laptop. That's a small one for investigating the upper 5 to 10 meters of snow layering in great detail. The layers give a historical picture of what's happened there, like the rings of a tree.

Starrett 5-meter measuring tape

During an expedition led by Australia in 2003, we wanted to mount a piece of equipment—our thermal radiometer—on the railing of the ship to measure the skin and air temperature on sea ice, but we didn't have a tape measure. We got this one in Hobart, Tasmania.



Garmin hand-held GPS and Kestrel 4000 pocket weather meter

That's handy because if you're in a small camp, the pilots ferry in teams and supplies, and they want to hear what the weather is like—wind speed and direction—before they land.

Panasonic Toughbook

This interfaces with the data-recording device for the radar and the camera, chronicling what we see and measure. We also use it to watch movies. A *Mighty Wind* was a favorite one year. No polar movies. Most of them are pretty bad.

Life-Link avalanche shovel

If you get into trouble, you can dig out your snowmobile with this. Snow in Antarctica isn't like what you see at a ski resort. It's more like Styrofoam that you can chop into blocks.

Iridium satellite phone and Goal Zero solar panels

That's become essential equipment. Scientists used to be issued big shortwave radios that required big batteries and antennas. We use the solar panels to charge the satellite phone out on multiday treks.

Grivel ice ax and climbing rope

This is the field mountaineering gear we carry in a crevassed area. We try not to work in places where falling into crevasses is a danger, but sometimes you can't avoid it. We've been trained to rescue somebody, if we had to, but we always have a field mountaineer that works with us to be safe.



Grabber hand warmers

We'd put two or three hand warmers into large mitts called "bear paws." They're from the Cold War, and they're so big you almost can't do anything with them—they're like boxing gloves. The way you work at -30 is you pull out your hands and work for maybe three or four minutes on some fine instrument; then your fingers get so cold that you really can't do what you want to do anymore.

Canada Goose expedition parka

We call this "Big Red." It was designed specially for working at McMurdo Station in Antarctica, but it's actually a bit of overkill for most of the work we do. When you're out burying equipment and taking samples, you can heat up quickly—and you really don't want to sweat. If you do, you can actually get icicles on the inside of your clothes.

Bumble Bee sardines, Lake Champlain Chocolates dark chocolate, Nature Valley granola bar

Good pocket food is important. It's amazing how many more calories you consume in the cold, but I almost always lose weight in Antarctica.

I never eat sardines while in the U.S., but in Antarctica I really like them.

Swedish Fish

» Give a man a fish, and you'll feed him for a day. Teach a man to fish, and you'll feed him for a lifetime. Tell him he has more fish than his neighbors—and apparently he'll vote conservative.

So says a new study by three Swedish-based researchers, who found that when it comes to opinions on the redistribution of wealth, a little self-awareness goes a long way.

The researchers conducted a survey among Swedes that first looked at whether respondents had a good grasp of where they fell on the spectrum of their country's income distribution. They did not: When asked to estimate the percentage of their compatriots who earned a yearly income below their own, 74 percent of respondents were off by more than 10 percentage points. The vast majority (92 percent) of those who guessed wrongly underestimated their own positions—meaning, they thought they were poorer than their compatriots. All those surveyed were also asked several questions meant to assess their political leanings.

Months later, the researchers returned to their subjects and, based on random selection, clued half of them in to their true positions on the Swedish economic ladder—which in most cases was higher than they had originally thought. The subjects were then queried again about their politics: Among other questions, they were asked what level of wealth redistribution they would prefer, which political party they supported, and what changes they would make to Sweden's income tax system.

People who learned they were richer than they had assumed, researchers found, were more likely to demand lower levels of wealth redistribution than those who were not informed about their true level of relative wealth. They were also more likely to express support for the Sweden Democrats, the country's far-right party. (The effect was much stronger, however, for those who had initially expressed some right-wing leanings in the first round of the survey.)

Why different countries have different predilections when it comes to wealth redistribution remains a puzzle for political scientists. Some experts have suggested that the United States, for instance, prefers lower levels of redistribution relative to other developed countries in part because many Americans have a skewed sense of how well off they actually are. Now evidence suggests that the famous Nordic socialism may be less about

adhering to the Law of Jante—that is, a mentality that emphasizes the collective—and more about a big misunderstanding. ♦



Lord of the Flies

BY ALICIA P.Q. WITTMAYER

ILLUSTRATIONS BY SERGIO MEMBRILLAS

In 1969, entomologist T.A.M. Nash wrote in *Africa's Bane: The Tsetse Fly* that the unpleasant little insect, its nasty bite, and the sleeping sickness it carries had fundamentally shaped agriculture across a wide swath of Africa. “It seems reasonable to suppose that for hundreds of years, the tsetse dictated that the economy of the African should be based on the hoe and the head-load,” Nash noted.

Tsetse flies, in other words, had created environments ill-suited to the domestication of animals, such as cattle and horses, that could have made large-scale farming possible.

Turns out, Nash was onto something—but it may have been an even bigger phenomenon than he imagined. Well beyond agriculture, the tsetse fly may have left an indelible mark on numerous aspects of life in parts of Africa.

In a forthcoming

January 2015

study in the

American

Economic

Review,

Marcella

Alsan,

assistant

professor of

medicine at

Stanford

University,

identified a

handful of

societal

characteris-

tics from the

pre-colonial

era that seem

to have played

a pivotal role

in predicting

how well

various African societies have fared economically, up to the present. These traits include the degree of political centralization of a government—that is, whether a central authority could marshal taxes and provide public goods—and whether there was indigenous slavery. She then compared those traits to what she calls the “tsetse suitability index,” or a scoring system that gauges how hospitable a

region's climate is to the troublesome fly, based on temperature and humidity.

Alsan found that important societal traits could be explained, in part, by the presence or absence of the tsetse fly. A lack of agricultural development brought on by the fly, for instance, meant a population could never grow dense enough for centralized government. Meanwhile, a lack of domesticated animals to work equipment meant that slavery remained a

relevant institution.

Does the tsetse fly determine long-term destiny? Not necessarily. Consider Nigeria, which sits in the heart of the fly-friendly zone but has nonetheless grown into Africa's largest economy. By contrast, the ancient city of Great Zimbabwe,

the capital of a once-powerful civilization that nurtured agriculture and trade, has been relegated to the history books, despite its location on a tsetse-free highland, while present-day Zimbabwe is one of the world's most dysfunctional states. Still, Alsan's research gives the tsetse its due: For its size, the study emphasizes, the fly was—and might still be—a surprisingly mighty force. ♦



GIRL POWER MEANS BOY POWER

» Women's empowerment is good for, among many other things, economic development, global health, and the advancement of human rights. Now research shows that it's also good for medal counts.

A study in the *Journal of Experimental Social Psychology*, due out in early 2015, looks at the connection between gender equality and how well a country's athletes—both male and female—have fared in the Olympics. The study, which looked at results from both the Summer 2012 and Winter 2014 games, found that the better a country scored on metrics of equality between the sexes as measured by the World Economic Forum (across the realms of economics, politics, health, and education), the more medals it accumulated. (The authors controlled for factors like gross national product and population size.) Equality in education was an especially good predictor of performance by a country's athletes.

Interestingly, greater gender parity at home not only seemed to provide female athletes with a boost, but it was also linked with male performance. Although the researchers did not examine why, precisely, this was the case, lead author Jennifer Berdahl of the University of British Columbia speculates that strict gender roles might hinder some talented male athletes from pursuing their dreams. For example, men who are considered too feminine by societal standards may leave their sports early.

The results echo those of another study, released in April 2014, which looked at Summer Olympics between 1996 and 2012. It found that athletes of both sexes had a better chance of medaling if they were from a more gender-equal country.

The authors of the new study say their findings belie the idea that measures such as Title IX, which has enhanced resources for U.S. women's sports, creates gains for female athletes at the expense of male success in the long term. Rather, such measures can help build a society that, the researchers note, “allows members of both genders to realize their true potential.” ♦



Christine Lagarde

Managing Director of the International Monetary Fund

INTERVIEW BY DAVID ROTHKOPF | ILLUSTRATION BY ROBERT BALL

When Christine Lagarde took over the International Monetary Fund in 2011, the bank was in crisis. Its previous chief, Dominique Strauss-Kahn, had resigned amid allegations of sexual assault. But restoring the IMF's profile wasn't Lagarde's biggest challenge at the time. That honor went to the eurozone. Lagarde buoyed debt-distressed European countries, helping to negotiate a bailout deal for Greece and raising more than \$400 billion for a global rescue plan. Credited with helping to save Europe's economy, Lagarde is now leveraging the bank's resources in other ways. This year, the IMF pledged \$17 billion to Ukraine, and in September it committed \$130 million in emergency financing to West African countries embattled by the Ebola epidemic. "If more is needed," Lagarde said at an October news conference, "it will be there."

FOREIGN POLICY spoke with Lagarde in Washington, D.C., prior to presenting her with the magazine's annual Diplomat of the Year award in late October. Lagarde discussed risks to financial stability, the IMF's current international role and reputation, and her frustrations with lawmakers in the world's largest economy.

► **When I arrived on July 4, 2011, I found an institution that was under shock.** The precipitated departure of the previous managing director had occurred under circumstances that put the institution on the front page of pretty much every newspaper around the world. With staff that was discouraged and a bit at a loss as to where the compass was going to be. My first priority was, then, to try to bring people together.

I think the fund is and will be as relevant as ever, if not more.

The decision to downsize the fund in 2006–2007 was very misguided. There are ebbs and flows. We have seen moments of economic euphoria, during which members suddenly question the relevance and necessity of the institution. Then comes the [economic] crisis, and everybody struggles to urgently increase their resources. At the end of the day, who is available in a very short period of time to put money on the table? Who is there to lend credibility to reforms that a country is prepared to undertake when it's in trouble? Who is there to provide technical assistance of a high caliber? Bringing together donors and countries in need, it's the IMF.

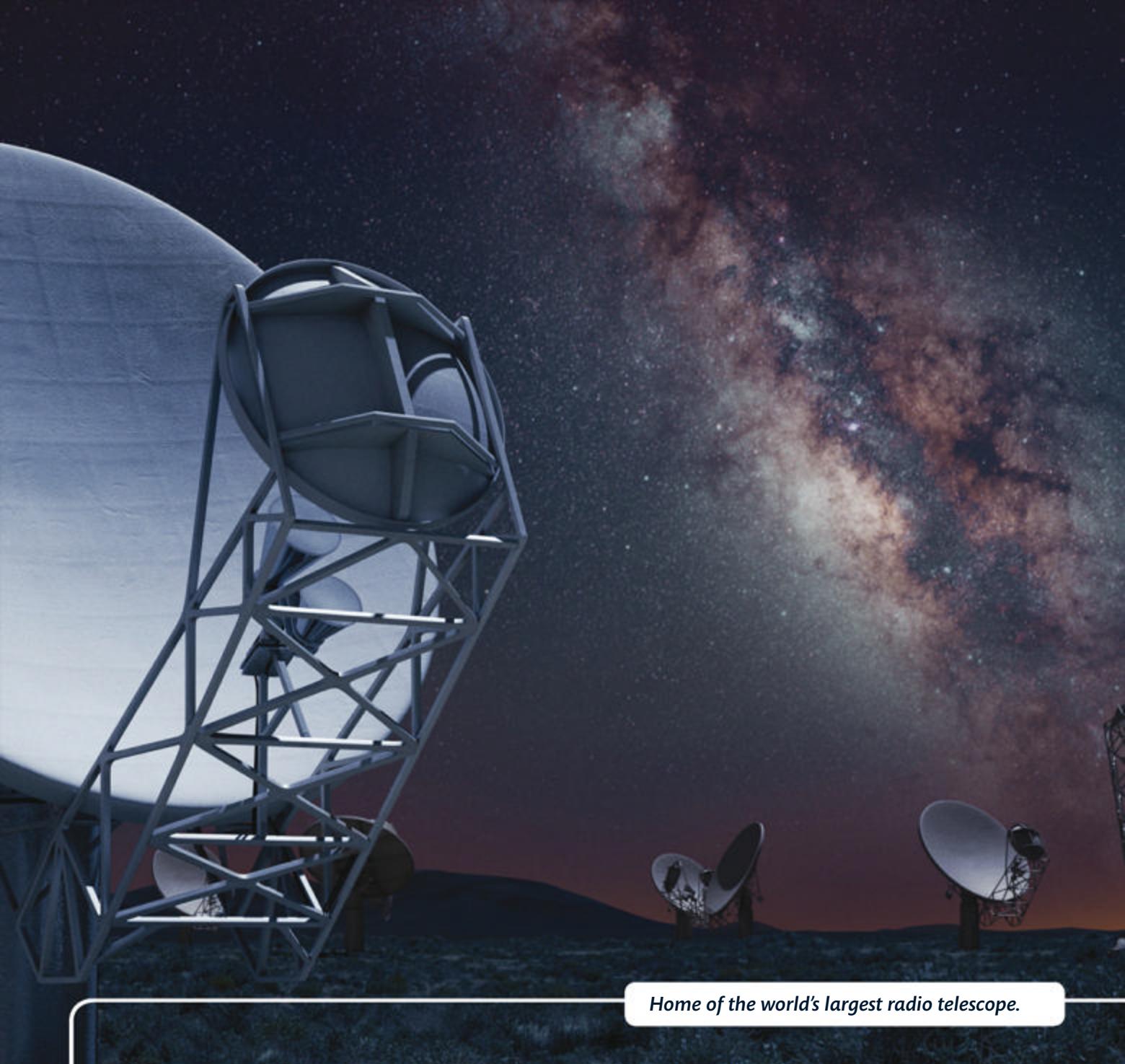
On Ukraine, everybody went, "Oh, we need to help," but then everybody scratched their heads as to how they were going to bring together financial packages. We were the institution that put \$17 billion on the table and negotiated and eventually approved a program of reforms that Ukraine has to go through if it wants to restore economic stability and eradicate corruption.

Economic exclusion is a major risk. When you know that more than 800 million women around the world are held back for all sorts of religious, economic, cultural reasons, that's an issue. When you see the number of young people, about 75 million of them, held back again because of high unemployment in many countries of the world, including in all the Middle East and North African countries, as well as in some of the European countries, those are really key issues.

The risks brought about by climate change are a major concern. It often goes unnoticed—unless people find out that 12 of the last 13 biggest climatic disasters have occurred in the last 10 years or they figure out that the actual rise of temperature will definitely exceed the 2 percent threshold that players had set for themselves five years ago. We have a group of countries here that are fragile states. They will be devastated by those consequences.

America is still the largest economy in the world and the biggest player, yet it doesn't deliver on its international commitment to multilateralism.

Congress and the executive branch are at odds with each other on a number of issues. One of those is the IMF's quota and governance reforms, which were agreed upon by the G-20 in 2010 but have not yet been ratified by the U.S. Congress. It's a sad reflection of a real dichotomy between the leadership that should be exercised by the United States of America, which still holds the international currency of reserve. It is still the largest economy in the world and the biggest player, yet it doesn't deliver on its international commitment to multilateralism.♦



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Residents walk in Puente Nayero's "humanitarian zone" in Buenaventura.

The Forgotten Streets

While ongoing peace talks may finally put an end to Colombia's guerrilla fighting, it remains to be seen what will happen to Buenaventura, the urban monster the war created.

By Scott C. Johnson
Photographs by Fabio Cuttica

BUENAVENTURA, COLOMBIA —

BOne day in the middle of August, a gaunt 20-year-old who goes by the name of Jeilin approached a middle-aged man and shot him several times in the chest with a pistol, killing him. The victim was a *carnicero*, a butcher, who worked in the San Pedro

neighborhood of Buenaventura, a sprawling, rain-soaked port city on Colombia's Pacific coast. The butcher's offense was simple enough, Jeilin explained: He refused to pay the two months' worth of extortion money, about 400,000 pesos (or roughly \$200), to the gangs who control the city's streets. What's more, Jeilin said, the butcher had

threatened to call the police.

"I shot him with a 9 millimeter," he said, "four times, to be sure he was dead."

Jeilin and I met in a hotel room not far from his home turf, a quadrant of streets in a waterfront neighborhood called Santa Monica, where rickety wooden shacks on stilts jut out precariously over the brackish water of the bay. Wearing a black wool

beanie, a T-shirt, blue jeans, and a pair of green Nike sandals, Jeilin was unassuming, but he explained that he was a *primero*—a kind of block leader for his gang, known as the Gaitanistas. Along with the Urabefios and La Empresa, Jeilin's gang is one of three main armed groups that control large parts of Buenaventura's waterfront through a combination of extortion, murder, kidnappings, and threats. For now, the Gaitanistas are the weakest of the gangs, but Jeilin said that his bosses have ordered him to keep fighting until the group controls the city completely. "That's the mission we have," he explained, "to keep our territory and to expand it." Was he ever afraid? He shook his head: "I'm not scared. When it's time to die, it's time to die."

Buenaventura is often described as Colombia's most violent city. Its homicide rate is 56 percent higher than the national average, and nine times that of New York City. An expansive port system has turned the city into the gateway for roughly 60 percent of Colombia's imports and exports, but very little of the profits have trickled down to residents. In 2013, some 15 million tons of legal goods, along with untold quantities of illicit drugs and weapons, passed through Buenaventura. The mix of high-end development prospects, a strategic international port with easy access to Asia, Europe, and North America, and the city's poverty—roughly 80 percent of the population is considered poor—has helped make Buenaventura a battleground for all sorts of competing interests, legitimate and criminal alike. Often called *bacrim*, for *bandas criminales* (criminal bands), Jeilin's group and others like it fight each other over drug-trafficking routes, but also for control of valuable waterfront property, which large companies are, in turn, eyeing for high-end development.

For decades, the Colombian government paid scant attention to the stretch of Pacific coastline where Buenaventura sits. With the exception of the port, the state largely abandoned these areas, leaving Buenaventura and its residents—mostly Afro-Colombian descendants of slaves—isolated and impoverished. Geographically separated from the rest of Colombia by the

Andes Mountains, the city is a signature of government indifference and continues to lack the necessary infrastructure that could connect Buenaventura with the rest of the country.

In 2012, Colombia joined the Pacific Alliance, a trading bloc that includes Mexico, Peru, and Chile, whose principle aim is to aggressively pursue economic ties with Asia, in particular China. But when government officials presented Buenaventura as a location for a Pacific Alliance summit the following year—a Pacific gateway to South America, the city had the region's largest port and could establish Colombia as a key player in the Pacific Alliance, the thinking went—the

idea was shot down because the city was far too dangerous. The summit was ultimately held hundreds of miles away on the Caribbean, serving as a wake-up call for those intent on moving the country into the next century. Since then, President Juan Manuel Santos has worked with city officials to improve Buenaventura's image by developing an aggressive plan to promote tourism

and downtown development that includes a multimillion-dollar waterfront esplanade and luxury hotels. But the state of affairs in this city have made such an about-face nearly impossible.

Colombia faces serious obstacles as it struggles to put 50 years of conflict behind it, and economic renewal is just part of Santos's plan to emerge intact from the guerrilla war that has pitted successive administrations against the Revolutionary Armed Forces of Colombia (known by its Spanish acronym of FARC). Peace talks, which began in October 2012 and now continue in Havana, Cuba, could potentially put an end to Latin America's longest-running conflict. But the problem is that, while the government is making progress on negotiations with the FARC, there are consequences of the war—seen most extremely in Buenaventura—that aren't likely to be healed by the peace process. Years of fighting, combined with a largely absentee government, have turned Buenaventura into a kind of feral place in which Jeilin and the other members of the bacrim—descendants of paramilitary groups that once fought the FARC—operate with impunity.

Unless Santos's government can deliver, quickly, on promises to tend to the consequences wrought by years of neglect, Buenaventura is only likely to become more violent, with or without a national peace agreement. And that could be disastrous for Colombia's long-term vision for its future.

MORE THAN 220,000 PEOPLE HAVE DIED IN

Colombia's war, thousands more have been wounded, and some 6 million have been internally displaced. All told, around 6.7 million people are considered victims of the conflict. The government and the FARC first tried in 1984 to engage in peace talks and have continued to try, in vain, ever since. That year, the Colombian government promised widespread changes, including agrarian reform, increased political participation, and a reconciliation process. But when these reforms failed to materialize and the commission that the government had established turned out to be ineffectual, the talks quickly broke down, and the FARC ramped up its campaign of attacks and ambushes.

Within a few years, the conflict became even more volatile. Landowners and small-business owners, outraged by the continued campaign of kidnappings and extortion, began backing right-wing paramilitary groups in Buenaventura, often with the tacit knowledge of the Colombian National Army and government. The most prominent of these paramilitary groups, the United Self-Defense Forces of Colombia (AUC), employed many of the same tactics of the FARC—assassinations, kidnappings, and massacres, often of civilians—in their bid to beat back the rebels. By this point, however, the FARC was actively engaged in large-scale drug trafficking to help fund its operations, increasing the nebulous ties among organized crime, terror, and economic survival.

In 2003, Colombia, under then-President Álvaro Uribe, undertook a massive campaign to "demobilize" some 32,000 paramilitary fighters who had joined the war, often at the behest of small-business owners who were more vulnerable to extortion campaigns by the FARC. As part of the campaign, the government also signed a peace deal with the AUC and offered fighters reduced prison sentences in exchange for laying down their arms. But the government didn't provide job training or education



COLOMBIA

programs to many of these ex-paramilitary fighters. Consequently, they began drifting back into drug smuggling and criminality, and, as such, the bacrim was born—a network that overwhelmingly consisted of people who had been caught up in the war, on both sides. On the streets, the bacrim members applied the same zeal to their lawless endeavors as they had as soldiers. Some former FARC members trafficked drugs, for instance, using the very networks that had helped them fund the war. And Buenaventura, with its open ocean access and general lack of rule of law, proved more than fertile ground for the bacrim to prosper.

If there was any hope for ex-combatants to trust the government's promises, that was squashed in 2006, when the government—which had promised former fighters protection from extradition during the demobilization process—began sending some of them north to the United States to face drug-trafficking charges. Supporters of the paramilitaries thought the government had betrayed its promise to protect them, while relatives of those whom the paramilitaries had killed lost hope they would ever learn what happened to their loved ones.

Today, President Santos is so committed to the peace process that he pegged his narrow re-election campaign to it, and recently he has had to push hard for patience and tolerance with a public that has grown wary of both the rebels and government rhetoric. The meetings in Havana have been plagued by setbacks, threats by both sides to walk away, and continued attacks and counterattacks as the FARC and government leaders jockey for position and leverage. (Other rebel groups are not part of the talks, and the government recently announced separate negotiations with the National Liberation Army, or ELN.)

But there also have been scenes of hope. In late August, Gen. Javier Flórez, the Colombian military's second-highest officer, met with senior FARC officials in person—the first time a serving general in Colombia has agreed to such an intimate and public encounter with sworn enemies. One of the FARC's top negotiators, Iván Márquez, said the meetings were a chance to talk "warrior to warrior." The meeting signaled that the two sides had opened discussions about the decommissioning of weapons and had moved one step closer to a final agreement.

For those in Buenaventura, the neighborhood is the new battlefield.

BUT FOR ALL THE OPTIMISM THE PEACE TALKS have generated in Cuba—and, to a lesser extent, Colombia—for the residents of Buenaventura, the talks might as well be happening on another planet. When Santos visited the city this past April, he vowed to develop job-training programs for young people, as well as increased credit lines for small businesses. The FARC responded by exploding a makeshift bomb at Buenaventura's central electrical tower, leaving the city dark for days. "Control of Buenaventura means control of the national economy of Colombia," said Víctor Vidal, a local council member and outspoken critic of government inaction in Buenaventura. "And as long as the ships keep coming and going and the port is working, no one cares about the deaths in these neighborhoods. No one cares."

That is to say, for those in Buenaventura, the neighborhood is the new battlefield.

In March, Human Rights Watch published a damning report documenting widespread human rights abuses in the city, including scores of murders, dismemberments, and disappearances. One of the more disturbing revelations was the existence of several *casas de pique*, or chop houses, where gangs torture their victims by cutting them to pieces—sometimes while the victims are still alive. They then throw the body parts into the ocean.

This spring, residents of Puente Nayero, a small sub-neighborhood that juts out into the bay, found themselves sandwiched between two warring bacrim groups, the Urabeños and La Empresa. At the end of one long street was a chop house. "They were killing people in front of kids; they were taking houses," said resident William Mina. "The community was scared." The 19-year-old remembers gangsters pulling people down the street and into the wooden shed. He remembers the screams.

Faced with daily death threats and terrorized by the violence, a group of

leaders had little choice but to organize themselves into a neighborhood watch and self-defense coalition to confront the tyranny of the gangs. With the help of the police and the Inter-Ecclesiastical Commission of Justice and Peace, part of the World Council of Churches, an NGO that places volunteers in violent communities as "witnesses," they walled off overnight the entrance to their street with wooden barriers and declared Puente Nayero a violence-free "humanitarian zone"; one of their first acts was to tear down the chop house. Today, some 290 families live inside, yet the gangs—desperate to expand their territory—continue to threaten the residents.

A humanitarian zone existing on a single street anywhere seems improbable—and it is. But for all its fragility, the zone does provide a necessary sanctuary for a beleaguered population. Near the entrance to the humanitarian zone, residents turned the wall of a house into a public mural with a hand-painted charter: #1 We will never use any kind of violence; #5 We will protect each other inside the humanitarian space; #6 We will take turns guarding the doors.

Nevertheless, when local children argue with each other, they resort to a language they know works. *Te voy a picar*, they say: I'm going to cut you up. "It's easy to get the paramilitaries out," said 22-year-old Fleiner Angulo. "But it's hard to get the violence out of your head."

FEW NEIGHBORHOODS IN BUENAVENTURA haven't been affected by violence, and some have been emptied completely as residents succumb to pressure and flee. According to Human Rights Watch, some 56,000 people were displaced in and around the city from 2010 through 2013, more than in any other municipality in Colombia. Many of these were children who became prey for gangs that are constantly on the lookout for new recruits. Although there are no official tallies of how many kids have been conscripted, Father Adriel Ruiz, who runs a parish and community center in a particularly rough neighborhood called barrio Lleras, estimates that as many as 4,000 children have been swept into the bacrim in recent years.

Julio César Biojó has seen a generation of children disappear into this underworld in the Palo Seco neighborhood, a jumble of half-finished wooden huts, open sewage canals, and rocky, trash-

strewn dirt lanes.

A native of Buenaventura, Biojó says the bacrim first appeared in his neighborhood in 2005 and immediately held a community meeting in a nearby school. They were there to protect the neighborhood, they told the residents. Over time, however, the newcomers began recruiting children and teaching them how to fight—and the children have since become the lifeblood of the bacrim.

In 2008, a group of armed men from La Empresa forced Biojó out of his home at gunpoint; they wanted to control the neighborhood, and he had refused to budge from his lot. He only returned in 2012, when control of the neighborhood had passed to the Urabeños and his former tormentors had been driven out. The new gang, he explained, wasn't necessarily a safer option, but, for the time being, the men who had threatened his family were gone. "We can't go against any of them or else we face assassination," he said. "So if you want to save your children, you have to find some other way to do it."

That year, he set out to help the community. With some meager government assistance, he created a safe haven where kids can read and play music. The NGO, called the Junta de Acción Comunal (Community Action Group), is run out of a cement building with bars on the windows. His own children, two boys and a girl, are frequent visitors. It's a far cry from a high-end day care or anything even resembling one, but it provides kids with a sense that there is at least one place outside their homes where they can feel a modicum of safety and where the bacrim might leave them alone.

Jeilin, the primero and assassin for the Gaitanistas, was one of the unlucky ones—a child who fell into the gangs early on. He was 13 years old in 2007, when two men from the Urabeños broke into his home while his family was eating a dinner of chicken and rice and shot both of his parents in the face as he watched. That year, Jeilin's cousin Longi, himself a gang member, taught Jeilin how to use a machete, then a gun, and finally schooled Jeilin on "technical things," such as how to dismember people properly.

Around that time, Jeilin said, he first participated in a murder. The victim was a woman who had transgressed somehow—it was never clear to Jeilin exactly what her crime was. Led by an older man, Jeilin and the other kids helped hack her to death

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with machetes. "Then we cut her up and put her in the ocean, and I went home," Jeilin said. "I went back to normal."

Jeilin's gaze is vacant and cold, and he expresses no remorse for his victims, though he did concede that thinking too much about his parents is difficult. "I feel sad for my family, but they already killed them. There's nothing to think," he said, explaining that what he does now is for them, "and it's also part of my job." In total, Jeilin said, he has killed eight people. Many of them he dismembered "finger by finger" afterward. Some of them he burned. Most wound up in the ocean. "If I get an order to kill," he said, "that's it."

IN MANY RESPECTS, BUENAVENTURA HAS already crossed a Rubicon of sorts, from being a city where police can be effective to one where a quasi-military occupation is required just to prevent complete anarchy. The violent waterfront neighborhoods in particular are swarming with police officers, all of whom are equipped with automatic assault rifles, pistols, and fatigues that make them look much more like soldiers than police. Virtually every corner of these neighborhoods is manned by at least one officer, often two.

Colombian officialdom insists that violence has been decreasing in Buenaventura. In late October, President Santos visited Buenaventura again and claimed that a security plan called Vamos Seguros (Let's Go Safely) had led to a 25 percent reduction in crime in Colombia's 11 biggest cities, including Buenaventura, within the first week of implementation. According to the president's website, seven drug-trafficking rings and more than a dozen armed-robbery outfits had been shut down.

When I visited in September, Col. José Miguel Correa, the commander of the local police force, similarly claimed that progress was already underway in Buenaventura. Sitting back in his chair, he pulled out a data sheet and began ticking off numbers—262 arrests of Urabeños and La Empresa members in 2014, including 26 leaders of both groups; 177 firearms confiscated; 2,732 kilos of drugs impounded—and said the progress was partly a result of increased pressure from Santos's Let's Go Safely plan and Buenaventura's strategic importance in Colombia's national narrative. "The geographic location, the peace process, our economic growth—all of these things are very important here," he said. "It was



William Mina, at home, helped organize Puente Nayero's "humanitarian zone."

terrible here, but the police have started to attack back, and that has weakened the gangs."

In early September, Colombian National Police and U.S. Drug Enforcement Administration operatives nabbed two leaders of La Empresa during a raid in Panama. Edgar and Ever Bustamante were believed to be responsible for large-scale drug- and money-smuggling operations in Buenaventura. "The police here are making spectacular progress," Correa said. "Criminal activity is going down, and it's limited to the gangs."

But many people in Buenaventura question this claim, maintaining that the police are complicit with the gangsters, actively working with them to keep revenues from the drug trade flowing. Even the district attorneys responsible for bringing criminals to justice express skepticism about the loyalty and diligence of the police with whom they work.

When I was searching for evidence of Jeilin's murderous exploits, a highly placed official at the district attorney's office agreed to speak with me on the condition that I not use his name. Rifling through a stack of blue and tan folders piled on his desk, he pulled file number 02417, which belonged to a butcher who was killed in the San Pedro neighborhood, a warren of alleys, shacks, and canneries where fishermen sell their daily catches. That sounded like the crime Jeilin had described.

The official looked at the file and frowned. "It doesn't say why he was picked up, and that worries me," he said. There was a killing and an arrest, but the paperwork shed no light on whether they were connected. The stories he came

across in his docket every day said as much about the authorities' incompetence and corruption as they did about the criminal networks operating in the city, he believes. Even with a functioning, ethical police force and a fully staffed prosecutor's office, he said, the violence in Buenaventura would still be overwhelming.

The official told me that he had reviewed 19 murder cases between July and September, and he pointed behind him to three large cardboard boxes filled with more pending cases—about 90 in total. Many of the victims were innocent merchants caught up in the violent politics of extortion, he said. But this caseload doesn't even take into account a portion of the other types of crimes, he said, such as kidnappings and disappearances, that are also routine occurrences.

"There's a capture of a gangster every day here, but it doesn't make a difference," he said. "You get captured, and there's always someone to replace you." What the city really needs, he added, is massive investment in infrastructure, education, and health. The peace process is a good thing, he said, but until these other, deeper problems are addressed, "the violence won't stop—there's too much misery."

THE COLOMBIAN STATE HAS BEEN ABSENT FOR so long in Buenaventura, Father Ruiz told me, that "the people have started living in a kind of anarchy." In that kind of environment, the prospect of thousands of trained soldiers, guerrilla fighters, and paramilitary thugs wandering around looking for work, or food, or simply a means to survive, is a sobering one.

Even with a functioning police force and a fully staffed prosecutor's office, the violence in Buenaventura would still be overwhelming.

One evening I met with a former paramilitary soldier who had gone through the demobilization program; he requested anonymity. Originally from a rural area called Pital, he was recruited in 2001 into the Bloque Calima, a notorious paramilitary organization. He was uneducated and illiterate, and the paramilitary group offered him 700,000 pesos a month (about \$350). That same year, in April, he was involved in an infamous chainsaw massacre along the banks of a river, which flows down from the mountains toward Buenaventura. A few weeks later, the group's leader forced him to kill a friend, apparently for a minor infraction involving a rifle. For some commanders, he realized, "the weapon was worth more than the man."

Scared and emotionally overwhelmed, the soldier entered the demobilization program. And though he received modest payments from the government, he didn't receive any job training or education. Eventually, the money ran out.

He can't return to his ancestral village along the river because too many people who sympathize with the FARC are still there, and his affiliation with the paramilitary groups would be a death sentence. So he's scraping by in Buenaventura as yet another possible recruit for the gangs who control the city.

"I never want to touch another weapon in my life," he said. "But what I don't know is if the weapons are going to touch me." In other words, with no prospects and no further support from the government, he may find that his only means of survival involve crime. ♦

"I went in ignorant, without thinking about my life and the future, and my ties to the community are broken," the ex-paramilitary soldier said. "I just want the government to help me keep the promise we both signed."

ON BUENAVENTURA'S WATERFRONT SITS THE neighborhood of Colón, which, like the others, is little more than an assemblage of shanties. Several former FARC rebels occupy one set of houses at the end of a dirt road. Nearby are several known members of the Urabeños, who in recent years have taken control of the neighborhood. Here, in this forgotten corner of the city, the guerrilla war seems like a distant memory, but the threat of violence to everyone remains stark.

Although I understood the toll that violence is taking on Buenaventura's residents, in the first week of my reporting I hadn't seen any bloodshed myself. That all changed one late afternoon, when it was still bright outside and the streets of Colón were filled with people. I was getting into a car when a shot rang into the air. A crowd, screaming and crying, ran away from the noise and toward the water. In their midst, a large man held a woman by her hair and dragged her across the street; both of them were shouting. The man carried a pistol and pointed it at the woman's head.

Moments later, at least four more shots rang out.

The street mostly emptied except for a small number of spectators. About 50 feet away from me, lying by the side of a black Kia sedan, was the woman, a 42-year-old wife and mother of two named Yolanda del Socorro Guerrero, the 16th woman murdered in Buenaventura this year. She ran a small business selling *panela*, or brown cane sugar, and according to witnesses and police, she had come to Colón to meet a customer. It emerged later that she had probably refused to pay the requisite bribe to the local gang, in this case the Urabeños, and for that she was murdered.

None of the residents told the police they saw anything; saying too much was dangerous. Meanwhile, Yolanda's killer disappeared on the back of a motorcycle, trailed by a small car with black tinted windows. Around Yolanda's head was a large pool of blood and, on her back, a large smoke burn, indicating that the last bullet was fired at short range, when she was already down, the latest assassination of 2014. ♦

Scott C. Johnson is the former bureau chief for Newsweek in South Africa, Mexico, and Iraq. His book, The Wolf and the Watchman: A Father, a Son, and the CIA, was longlisted for a National Book Award in 2013.

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Rachel Kyte GMAP 2002,
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James Stavridis MALD 1983, PhD 1984, (left), former Supreme Allied Commander at NATO and current Fletcher Dean, and Joseph Dunford, MALD 1992 (right) Commandant of the United States Marine Corps



Manjula Dissanayake, MALD 2012,
Founder, Educate Lanka micro-
scholarship fund; *Diplomatic Courier's*
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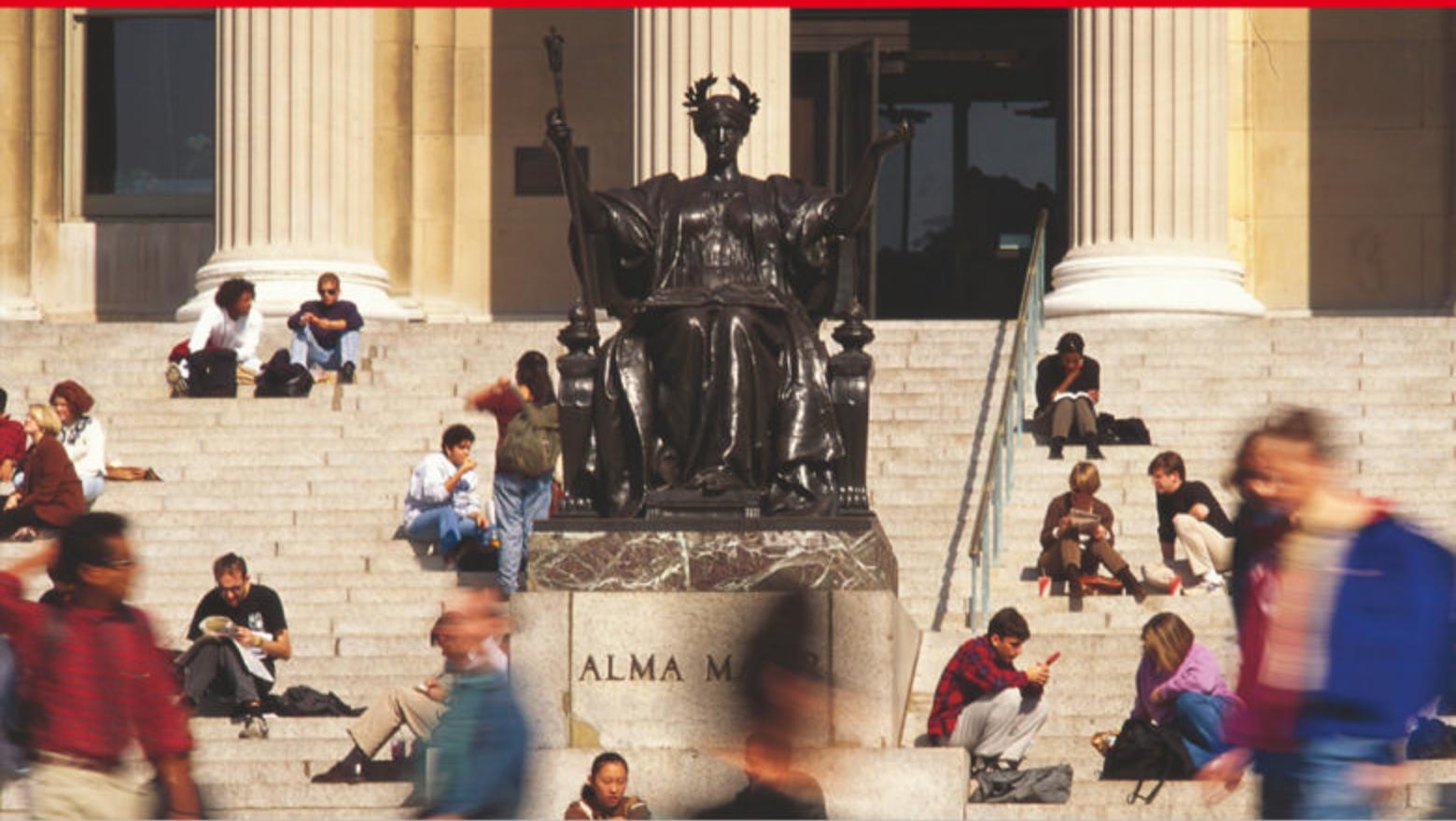


Mariana Benitez Tiburcio, LLM 2012,
the first female Deputy Attorney General
for International and Legal Affairs of
Mexico, second in line to the national
Attorney General's Office.





Leaders in Higher Education



When James Stavridis became dean of The Fletcher School at Tufts University last year, he arrived as a seasoned leader with a knack for working with people and motivating them. Stavridis had previously served as NATO's supreme allied commander.

"If an organization is to be effective and fulfill its mission well, it needs to have a strong leader who really builds collaboration. It takes a special sort of person," says Bernadine Chuck Fong, director of leadership initiatives at Stanford University and senior managing partner at the Carnegie Foundation for the Advancement of Teaching.

A background in business, law, or government can be helpful for leading a school of international affairs or global policy, but academic leadership requires even more.

"There are organizational leaders, and there are thought leaders," observes Fong. "In higher education, you need to be both. Organizational leaders in academia also need to provide enough thought leadership to really stretch the faculty."

Stavridis is clearly a thought leader as well as an organizational leader. In praising his new memoir, *The Accidental Admiral*, Anne-Marie Slaughter, president of the New America Foundation, wrote, "He is equal parts thinker and doer, asking hard questions and continually challenging himself and the men and women under his



command." And former Secretary of Defense Robert Gates wrote, "Adm. Jim Stavridis is one of the most forward-thinking military officers and enlightened leaders of his generation."

Stavridis also happens to be a Fletcher alumnus. His affiliation with the school stretches back more than 30 years.

Some academic leaders have an unusually deep affiliation with their institution. At Columbia University, for example, Merit E. Janow has been a student, a teacher, and a scholar, and is now dean of the School of International and Public Affairs (SIPA).

"As a leader, you need to fit in with the culture of the organization and its expectations," says Fong.

At the New York University (NYU) School of Professional Studies, divisional dean Vera Jelinek sets the tone at the Center for Global Affairs (CGA), which she founded in 2004. Before that, she administered international programs at the School for 20 years.

Adil Najam joined the faculty of Boston University (BU) long before the founding of the university's new Frederick S. Pardee School of Global Studies. As inaugural dean, he envisions a school that is groundbreaking in its approaches yet builds on BU's long tradition in global studies.

Sometimes the influence of a dynamic leader reaches well beyond the school itself. Kenneth Paul Tan, vice dean for academic affairs and associate professor at the National University of Singapore

(NUS) Lee Kuan Yew School of Public Policy (LKY School), lectures and writes extensively on issues such as liberalization and democracy in Singapore, cultural change, and the role of the arts. Singapore's *Straits Times* has described him as "a constructive critic and active political citizen."

Another innovative thought leader is Cullen Hendrix, assistant professor at the University of Denver's Josef Korbel School of International Studies. His knack for identifying research topics relevant to current global conflicts that are not well understood has led to work that could have substantial impact on global policy and improve the quality of life of millions.

Realizing a Vision

Adil Najam has been a sports reporter, a TV talk show host, a university vice chancellor, a UN negotiator, and a professor of international affairs. As the inaugural dean of BU's Frederick S. Pardee School of Global Studies, he leads the effort to put meaning into the school's mission of advancing human progress.



Adil Najam, inaugural dean, Frederick S. Pardee School of Global Studies, Boston University

Najam sees the school as an outstanding place for strong college graduates from a variety of backgrounds to follow their passions in cultivating a multidisciplinary career path in international affairs. He believes that careers in global policy will increasingly require combined competencies and that students will benefit from the Pardee School's wide range of course selections, program choices, and joint degree options.

"In addition to all the courses within the Pardee School, we offer an amazing array of courses at BU in the humanities, social sciences, and natural sciences," says Najam. The school aims to foster a sense of global citizenship together with a sense of the connections among different disciplines and issues.

The school's mission of advancing human progress has inspired a \$25 million gift from BU alumnus and benefactor Frederick S. Pardee, for whom the school is named.

The Pardee School incorporates strengths from BU's history of focus on global studies, which dates back to the 1890s. At the same time, Najam notes, "We are trying to do something new and different. The sense of newness comes with an obligation to respond to the great challenges of our time. We are asking, 'What does international affairs in the 21st century look like, and how can we prepare our students for this?'"

One important goal for the school is to be innovative in the teaching of languages and in study-abroad programs. Students will have access to courses in the 22 languages currently offered at BU,

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— Adil Najam, inaugural dean, Frederick S. Pardee School of Global Studies, Boston University



9

Graduate Programs (MA)

- International Affairs
- Global Development Policy
- International Relations & Environmental Policy
- International Relations & International Communication
- International Relations, Mid Career
- International Relations & Religion
- Latin American Studies
- International Relations & Juris Doctor
- International Relations & Master of Business Administration

2

Graduate Certificates

- African Studies Certificate
- Asian Studies Certificate

5

Undergraduate Majors (BA)

- International Relations
- Asian Studies
- European Studies
- Latin American Studies
- Middle East & North Africa Studies

8

Undergraduate Minors

- African Studies
- African Languages & Literature
- East Asian Studies
- European Studies
- International Relations
- Latin American Studies
- Muslim Cultures
- Muslim Societies

7

Centers and Programs

- African Studies Center
- Center for the Study of Asia
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which include not only Arabic, Chinese, Japanese, Korean, and numerous European languages, but also Hausa, Hindi-Urdu, Igbo, Persian, Swahili, Turkish, Wolof, Xhosa, and Zulu, among others.

"We want students to appreciate the fact that people think in different languages and in different cultural contexts. Global leaders of tomorrow will need to understand these differences," says Najam.

Najam's wide-ranging experience includes serving as vice chancellor of Lahore University of Management Sciences (LUMS), one of Pakistan's leading universities. As a professor of international relations and earth and environment at BU, he has a diverse range of research interests, including sustainable development, Muslim and South Asian politics, and environmental policy in developing countries.

Najam shares Frederick S. Pardee's passion for creating a better, more peaceful world and his appreciation of BU's focused commitment to global issues.

"These are the true drivers of the new school's future," he says.

Making Research Meaningful

Life is exciting these days for Cullen Hendrix, assistant professor at the University of Denver's Josef Korbel School of International Studies. For one thing, his first child was born this fall. For another, his team at the school's Sié Chéou-Kang Center for International Security & Diplomacy recently received a major grant from the Carnegie Corporation of New York to research a topic of growing interest on the global scene: the peacebuilding role of nonviolent actors in violent conflicts. Hendrix is also part of a team at the school that is developing new approaches to measure and model state fragility, thanks to a major U.S. Department of Defense grant.



Cullen Hendrix, Josef Korbel School of International Studies, University of Denver

understood, such as the role of food insecurity in conflict and the security implications of climate change. "We're really trying to make sure that the knowledge we're generating academically is useful to our society and to the global community," he says.

Involving students in this work is crucial. "We're arming students with the background knowledge and analytic skills to address these topics," notes Hendrix. "I believe that experiential

education is an incredibly meaningful way to introduce students to a broader world and to the practical elements of fieldwork."

Hendrix is co-director of the Geographic Information Systems (GIS) Center at Lake Victoria, where his team studies the complex interrelationships between fisheries and food security in East Africa's Lake Victoria basin, in collaboration with the National Fisheries Resources Research Institute (NaFIRRI) in Uganda. In addition to partnering with NaFIRRI in scientific studies, he and his team offer GIS training for local scientists and natural resource managers.

"The tools and training have been used to help manage fisheries, which provide income and food security for millions in the region," says Hendrix. "Moreover, this program has provided field research opportunities and training for graduate and undergraduate students. Now, when potential employers or graduate school mentors query these students about their skills and experiences, they will bring a more diverse, applied toolkit to the table."

Hendrix's work is driven by his curiosity about how people interact with their natural environment. He sees a need to better understand how a growing and increasingly affluent world population can meet its food and energy needs while promoting socially inclusive, sustainable development.

Expanding International Impact

Kenneth Paul Tan has been called "a gentleman scholar as well as a bold intellectual" and "the very model of a new breed of a modern university leader." Singapore's largest circulation newspaper, *The Straits Times*, has referred to him as "the ultimate insider-outsider" for his ability to challenge the status quo while remaining a loyal, responsible citizen.

Tan is vice dean of academic affairs and associate professor at the National University of Singapore (NUS) Lee Kuan Yew School of Public Policy (LKY School), and his writings span an incredibly broad range of topics: liberalization, democracy, film, television, popular culture, theater, race, gender, sexuality, "spatial justice" in Asian cities, nation branding, and more.

He has received more than 10 teaching awards and is also a member of the Arts Advisory Panel of Singapore's National Arts Council and the founding chair of the Asian Film Archive's board of directors. In addition to sitting on the board of a cutting-edge theater company, The Necessary Stage, Tan has composed music for some of its performances.

Tan sees the arts as critical in shaping a progressive and self-reflective society. "The Singapore system is very good at setting

"We're really trying to make sure that the knowledge we're generating academically is useful to our society and to the global community."

— Cullen Hendrix, Josef Korbel School of International Studies, University of Denver

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Kenneth Paul Tan, vice dean of academic affairs and associate professor, National University of Singapore, LKY School of Public Policy

up top-quality infrastructure and incentive structures," he says. "Developing content and substance is more challenging. This is where philosophers, artists, filmmakers, public intellectuals, researchers, and academics will have to play an important role."

LKY School is already playing an important role in inspiring and preparing future global leaders. Since the school's founding in 2004, enrollment has increased tenfold to 400 master's degree and PhD students, with 80 percent coming from outside of Singapore and 20 percent from beyond Asia.

"We have established a rigorous, innovative, and unique curriculum that directly addresses the needs of today's leaders and policy professionals," says Tan. "To help us make the widest impact internationally, we are fortunate to be among the most well-endowed schools of public policy in the world."

Team teaching encourages LKY School students to take an interdisciplinary approach to problem-solving. For example, the school offers a course on policy challenges that uses a team of professors from economics, political science, and management. "Immediately, it becomes obvious to the students that reality is complex and multidimensional, and that solutions derived from only one field of study are going to be fragile and inadequate," says Tan.

Study trips also encourage interdisciplinary thinking and problem-solving. For example, some LKY School students will go to India this year to work on projects related to the Ganges River cleanup, and student teams will work closely with the LKY School's Institute of Water Policy.

Since 2010, the LKY School has been working closely with Kazakhstan's government and Nazarbayev University to establish central Asia's first graduate school of public policy. "We aim to share our knowledge and experience with additional governments and universities in the coming years," says Tan.

The LKY School is also in the early stages of producing one or two MOOCs (massive open online courses) focusing on policy design and water governance.

Photo at top: The Sunday Times © Singapore Press Holdings Limited. Reproduced with permission.

Responding to Current Global Challenges

As divisional dean of the NYU School of Professional Studies Center for Global Affairs (CGA), Vera Jelinek values flexibility. CGA has a history of growing and evolving to address emerging global trends and developments, and it continues to do so.

In 2004, when Jelinek created the Center's first degree, the Master of Science in Global Affairs, she envisioned a graduate program that would be responsive to current global challenges and practical in its applications.

The master's degree program initially offered a choice of five interdisciplinary concentrations: environment/energy policy; human rights and international law; international development and humanitarian assistance; international relations; and private sector studies. Two years ago, two additional concentrations were introduced: transnational security and peacebuilding.

"A decade ago, I never imagined the range of subject matter and the diversity of formats that would be covered in our degree and non-degree offerings," says Jelinek. "It is not a static program. It has evolved and increased in number of

students, in program depth, and in coverage of global issues."

In addition to the master's degree, CGA now offers three graduate certificate programs: Global Energy, Transnational Security, and Peacebuilding.

A distinctive feature of the master's program is its immersive field intensives, which give students the opportunity to engage in field research abroad for about two weeks with faculty members. Students and faculty have explored private sector initiatives in China, development in Ghana, human trafficking in India, security in Prague, and other issues.

Over the past four years, CGA students have also been working in Iraqi Kurdistan with students at the University of Duhok. Their work has expanded to respond to tensions created by the influx of refugees and civilian displacement in the area.

"It is not a static program. It has evolved and increased in number of students, in program depth, and in coverage of global issues."

— Vera Jelinek, divisional dean, NYU School of Professional Studies Center for Global Affairs



Vera Jelinek, divisional dean, NYU School of Professional Studies Center for Global Affairs



Mark Galeotti

Clinical Professor
Center for Global Affairs

“Transnational Crime”...“Intelligence and Counterintelligence”...“Hard Power: The Uses and Abuses of Military Force”... just some of the courses that Dr. Mark Galeotti teaches at the **NYU School of Professional Studies Center for Global Affairs**. His areas of specialty include organized crime, security affairs, and modern Russia. His depth of knowledge is based upon years of experience working as a researcher in the British Houses of Parliament and in the City of London, serving as an advisor to the British Foreign & Commonwealth Office, and collaborating with commercial, law enforcement, and government agencies—from the U.S. Department of State to Interpol.

Through his teaching in the **M.S. in Global Affairs**, Dr. Galeotti explores organized crime and its impact on the international order, providing students with a knowledge base that could only be acquired through years in the field. It is this caliber of education and this level of expertise that defines the programs offered by the Center for Global Affairs, as well as those across the NYU School of Professional Studies.

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CGA plans for expansion of the master's program include adding a gender studies concentration and a new initiative for the study of emerging threats.

On the non-degree side, the Center provides summer institutes in global affairs, professional training for junior diplomats assigned to the United Nations, and immersion programs in global affairs for high school seniors and college students.

Jelinek aims to build a substantial endowment to help increase scholarship and financial aid opportunities for students. "It is essential that we provide meaningful preparation for our students to address global challenges," she says.

Preparing Future World Leaders

A school that prepares and supports the next generation of world leaders needs not only a broad-ranging curriculum, but also a seasoned leader with broad experience. Merit E. Janow, dean of Columbia University's School of International and Public Affairs (SIPA), has served in a variety of roles in the private and public sectors. Her background includes representing the U.S. in trade



Merit E. Janow, dean, School of International and Public Affairs, Columbia University

negotiations with Japan and China, working on cross-border enforcement and policy issues at the U.S. Department of Justice, and adjudicating international trade disputes as one of seven members of the World Trade Organization Appellate Body.

"I am convinced that the solutions to policy challenges today and into the future will require international and interdisciplinary perspectives, as well as collaboration between the public and private sectors," says Janow.

"We are a U.S.-based institution, but we believe a global perspective is essential to training students from around the world to be effective leaders and problem solvers."

SIPA places a strong emphasis on rigorous academic analysis and learning in combination with practical skills and applied knowledge. The curriculum culminates in required capstone workshops in which small teams of students solve real-world problems for clients that range from multilateral financial institutions to city governments and NGOs around the world.

SIPA faculty are recognized internationally for their research on pressing global issues such as the impacts of climate change, the shifting priorities of U.S. foreign policy, innovation in emerging markets, the economics and geopolitics of energy, and the challenges facing international financial institutions. Students benefit from the school's dynamic blend of scholars and practitioners, which produces an innovative curriculum across its core fields, from finance in emerging markets to conflict resolution.

"SIPA is the interdisciplinary hub of global-policy teaching, research, and engagement at Columbia," says Janow. "We regularly work across disciplines and schools—including the law, business, and engineering schools—to engage an extremely vibrant community of students, scholars, and practitioners."

One of Janow's first initiatives as dean has been to extend the school's focus on the ways in which technology is reshaping the political, economic, legal, social, and global public policy landscape. In addition to launching new courses that explore these developments, SIPA has received a major grant from the Carnegie Corporation of New York to develop a multidisciplinary program of applied research on cybersecurity and Internet governance.

With support from a Silicon Valley entrepreneur, SIPA has created a challenge grant program that supports student teams using Web-based tools and advanced data analytics to solve urban problems. In the past year, SIPA has also added new programs in gender and public policy, humanitarian policy, and the United Nations.

"We prepare students for careers of the coming century, in which they will move between countries and sectors," says Janow.

"We regularly work across schools and disciplines—including the law, business, and engineering schools—to engage an extremely vibrant community of students, scholars, and practitioners."

— Merit E. Janow, dean, School of International and Public Affairs, Columbia University

Thinking and Innovating

"One of the joys of coming out of uniform and becoming dean of The Fletcher School is that the academic world allows and expects you to take time to think," says James Stavridis, the recently retired supreme allied commander of NATO.

Stavridis and his colleagues at Fletcher have been thinking about new areas of focus for the curriculum, such as women in international security; the use and power of social networks to shape international diplomacy; and issues related to developments in biology, such as genetic engineering and bioterrorism.

Stavridis sees effective communication as a key skill that senior leaders need today and a growing area of focus throughout the Fletcher curriculum.

He and others have also been looking at ways of



James Stavridis, dean, The Fletcher School at Tufts University



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expanding executive education programs at Fletcher, such as providing training for diplomats and a new certification program for U.S. government officials.

"One of the joys of coming out of uniform and becoming dean of The Fletcher School is that the academic world allows and expects you to take time to think."

— James Stavridis, dean, The Fletcher School at Tufts University

strategic communication, Stavridis is seeking grants to revitalize

In addition, Stavridis foresees new partnerships between Fletcher and a half-dozen or so other leading institutions. Potential global partners could include private sector foundations and NGOs, such as the International Committee of the Red Cross (ICRC).

In support of Fletcher's increasing emphasis on strategic communication, Stavridis is seeking grants to revitalize

the school's Edward R. Murrow Center for Public Diplomacy, which was established in 1965 in memory of the man whose distinguished reporting and analysis of world news and imaginative leadership of the U.S. Information Agency set a standard of excellence. The Center could eventually bring in speakers and offer a course focusing on the nexus between journalism and public diplomacy.

These ideas and others have been part of the process of developing Fletcher's latest strategic plan, a process that Stavridis considers essential for spurring innovation. The plan is set to be unveiled this month. In a recent article in TIME, he said, "It's not only a terrific way to team-build and create a coherent way ahead, but also a good exercise in learning where the fault lines and fissures of an institution lie. Research versus teaching? Practical skills courses versus theory and history? Fundraising for facilities or financial aid? Disciplines that cooperate together and those that compete? Working on the plan throws all those issues under a bright light—just what the new dean needs."

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“I came to Korbel because it's a place where new ideas and different ideas are brought about – it's not just about a set curriculum.”

- Kyleanne Hunter
M.A. Candidate
Sié Fellow



Kyleanne Hunter is a former officer in the United States Marine Corps, serving as an AH-1W Super Cobra attack pilot. Now she's a Sié Fellow at the Josef Korbel School's Sié Chéou-Kang Center for International Security & Diplomacy. As such she's working alongside world renowned faculty doing relevant research on today's most pressing global issues.

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A World Disrupted

THE LEADING GLOBAL THINKERS OF 2014

WHEN ITS HISTORY IS WRITTEN, 2014 WILL BE REMEMBERED AS A YEAR WHEN REMARKABLE INDIVIDUALS SMASHED THE WORLD LEFT HORRIFIC WRECKAGE IN THEIR WAKE, OTHERS SHOWED THAT A BETTER FUTURE DEMANDS TEARING DOWN FOUNDATIONS



PHOTOGRAPH BY MARCEL CHRIST

ILLUSTRATIONS BY KAYAN KWOK ICONS BY ELIAS STEIN

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AS WE KNOW IT—FOR BETTER AND FOR WORSE. WHILE SOME
AND BUILDING SOMETHING ENTIRELY NEW.



The Agitators

FROM THE MIDDLE EAST TO EUROPE TO AFRICA, 2014 WAS A YEAR OF unprecedented geopolitical fracturing. The Islamic State began relentlessly and violently redrawing borders in Syria and Iraq, while Russia aggressively staked new claims in eastern Ukraine and Boko Haram murdered and plundered its way through northern Nigeria. These Global Thinkers—terrorist leaders, ideologues, wily financiers—are the brains behind these splintering operations. In the course of just a few months, they have upended the world as we know it, leaving the future of whole regions and the lives of tens of millions looking dangerously uncertain.

ABU BAKR AL-BAGHDADI

FOR BRUTALLY REDEFINING 21ST-CENTURY TERRORISM.

Terrorist leader | Syria

In under a decade, Abu Bakr al-Baghdadi is said to have gone from being an Islamic preacher to a prisoner at a U.S. military base to the man at the helm of a terrorist organization that is redrawing the Middle East's borders.

As U.S. airstrikes decimated al Qaeda in Iraq's leadership during the Iraq War, Baghdadi began a meteoric rise through the organization and shifted its efforts into war-ravaged Syria. Today, Baghdadi, called the "world's most dangerous man," has thoroughly rebranded his group: As the Islamic State, it has conquered swaths of Syria and Iraq and shocked the world with graphic images of beheadings and mass executions.

Baghdadi has revolutionized the way the group makes money; instead of relying on foreign patrons, the Islamic State reportedly reaps millions of dollars per day from sales of crude oil, racketeering, and kidnapping plots. This wealth has granted him vast autonomy, and in June, he announced a new caliphate, or Islamic empire, and declared himself its ruler. The following month, in a sermon delivered at Mosul's Grand Mosque, Baghdadi laid out his ruthless vision: "He the most high says, 'And fight them until there is no sedition and until the religion, all of it, is for Allah.'"



PUTIN: IVAN SERGEYEV/AFP/Getty Images; AL-BAGHDADI: WIKIMEDIA COMMONS



VLADIMIR PUTIN

FOR MANIFESTING RUSSIA'S DESTINY.

President | Russia

The way Russian President Vladimir Putin tells it, the Soviet Union's collapse marked not only the dissolution of a political system, but the estrangement of a civilization. "The Russian people," he said in March, defending Russia's annexation of Crimea from Ukraine, "became one of the biggest, if not the biggest, split-up nation in the world."

To Putin, Russia is not defined by its current borders, but by the shared culture, language, and history of the Russian people. And it is his state's manifest destiny—territorial sovereignty of other countries be damned—to unite them. This ideology has informed the strongman's domestic policy as well: Putin has led a crackdown on political rivals, NGOs, and minorities in the name of defending so-called Russian values from the West's liberal excess and other forces.

In 2014, the international community decried Putin's machinations, both at home and abroad, as belligerent and even irrational. His tactics, however, may be perfectly coherent: Amid NATO expansion and growing economic ties between former Soviet states and the West, Putin sees Russia as a civilization under threat. And he believes that he is the man to save it.

ALEXANDER DUGIN

FOR MASTERMINDING RUSSIA'S EXPANSIONIST IDEOLOGY.

Political philosopher | Russia

If Russian expansionism has an ideologue, it is Alexander Dugin. The nationalist philosopher and Duma confidant first made his name in the 1990s with grandiose visions of Russian destiny: Like ancient Rome, Dugin claimed,

Moscow and its satellite states would guard against the decadence and degeneracy found in an ever-present Carthage (today, the West).

Since Russia's annexation of Crimea, Dugin's ideas have found new life. Called the "brains" behind that takeover, Dugin has since claimed that southern and eastern Ukraine—or Novorossiya (New Russia)—"pleads" for Moscow's intervention. He is in close contact with rebel commander Igor Strelkov and has reportedly even given instructions to separatists. "Ukraine as it was during the 23 years of its history has ceased to exist," Dugin wrote in March, in an open letter to Americans. "It is irreversible."

A former advisor to the Russian parliament who appears frequently on state television, Dugin has a strong foothold in the Russian establishment. He is a potent reminder that there is more behind Russia's bravado than realpolitik. As two Russia hands wrote this spring on *Foreign Affairs'* website, Dugin's dogma is "proving to be a strong contender for the role of Russia's chief ideology."

ABUBAKAR SHEKAU

FOR BRINGING AN ISLAMIC STATE TO AFRICA.

Leader, Boko Haram | Nigeria

Abubakar Shekau captured the world's attention this May in a video in which he gleefully took responsibility for kidnapping more than 200 schoolgirls in Chibok, Nigeria. "I will sell them in the market," he said. "Allah says I should sell; he commands me to sell."

Over the past year, Shekau's military savvy has proved devastating to Africa's most populous country and largest economy. He has transformed the jihadist group Boko Haram into the African equivalent of the Islamic State, bent on enforcing its medieval version of sharia law through brute force. Attacking town after town, killing and

Continued on page 56



THE BIRTH OF A NEW CENTURY

What the world lost in 2014.

BY GEORGE PACKER ILLUSTRATION BY EMMANUEL POLANCO

WHAT THE BRITISH HISTORIAN Eric Hobsbawm called “the long 19th century” ended 100 years ago, in 1914, in Sarajevo, with the two pistol shots that sparked World War I. Another historian, Fritz Stern, described that war as “the first calamity of the 20th century ... the calamity from which all other calamities sprang.” These disasters included

the Great War itself, which claimed some 20 million lives, including victims of the new century’s first genocide, in Turkey; the October Revolution in St. Petersburg, which gave birth to an ideological empire that would kill tens of millions of people and imprison hundreds of millions more; the rise of Nazism out of Germany’s defeat; World War II, with another 60 million deaths, including genocide on an

unprecedented scale; the upheavals and wars beyond the borders of Europe that followed the end of colonialism; and the division of the postwar world into two nuclear-armed camps, which fought each other through proxies in post-colonial lands.

It’s hard to say when the 20th century ended. For some historians, it was a short century that ended in 1989, or 1991, with the peaceful fall of communism

It has been a year of shocks. They originated in unhappy places well outside the charmed circle of safety, comfort, and freedom, but their impact was deeply felt in the West.

and the Soviet Union (at the time, the political scientist Francis Fukuyama called it the end of history itself). The years that followed were characterized by rapid globalization in communications, technology, capital, and human migration. The world's markets, institutions, and wars were presided over by the one superpower, the United States. This was the period of the new world order. In some ways, it was a continuation of the post-World War II decades, in which American power was preeminent if not undisputed. But it was also a transitional phase—and from the vantage point of the present, it's pretty clear that the transition is over.

When did the 21st century begin? There is a strong case to be made, following Hobsbawm's lead, that it happened this year, a century after Sarajevo. By the metric of corpses, the catastrophes of 2014 have hardly been more severe than those of any given year in the past 100; in some cases, they've been much less so. Nor have the year's horrors been new, in the strictest sense: We've seen sectarian slaughter, Russian revanchism, and the ravages of a deadly epidemic before. What's more, there has been no Sarajevo in 2014, no triggering event of transformation, no thunderbolt out of a blue sky.

Nonetheless, it has been a year of shocks. They originated in unhappy places well outside the charmed circle of safety, comfort, and freedom, but their impact was deeply felt in the West, where the structures of power and principle that used to contain such disruptions no longer seem to exist. For Westerners, that collapse is the greatest shock of all.

Russian President Vladimir Putin's annexation of Crimea and subversion of Ukraine shocked Europe—above all the Germans,

who believed that they were living on a continent that had learned well the lessons their country once inflicted on it, a continent of peace, unity, and inviolable borders. Putin is an autocrat of an old, familiar type: a strutting nationalist surrounded by rich cronies and ideological adventurers, showing his people with ethnic-based propaganda and inflaming their sense of historical victimhood, while daring the world to stand up to him. (No wonder they love him in Belgrade.) To see such a figure stoking wars as the head of a resurgent power, in 2014, suddenly cast a strange light upon the map of Europe. In July, hundreds of bodies—most of them Dutch—fell into a looters' field after a civilian airliner was shot out of the sky by Russian-armed separatists. Only then did the shock of Ukraine fully penetrate Western complacency.

The Islamic State was a second shock—a very ugly one—with its takeover of at least one third of Iraq, its consolidation of land and resources in Syria, its obliteration of borders drawn by European imperialists during and after World War I, and its drive to exterminate or expel ancient minority populations from territory under its control. Much about the Islamic State isn't new, beginning with its barbarism. Videotaped beheadings of civilians by jihadists date back to the murder of Daniel Pearl, in Pakistan in 2002, and Nick Berg, in Iraq in 2004. Yet it somehow took the Islamic State's series of foretold and dramatized ritual decapitations (which seem doomed to continue) on a bleak stretch of desert to bring home to Westerners the reality of the violence that Syrians and Iraqis had already experienced firsthand. The group's ideology, slogans, and ambitions are also familiar from its former sponsor, al Qaeda (Abu Bakr al-Baghdadi,

the Islamic State's "caliph," was once a lieutenant of the original leader of al Qaeda in Mesopotamia, Abu Musab al-Zarqawi). What's new and terrifying about the Islamic State is its success in imposing a semipermanent reality on the ground: the astonishingly rapid appearance of a self-anointed caliphate occupying a land mass more than twice the size of Jordan with millions of people, as well as oil fields, dams, and a large, well-equipped army, under its control.

The Islamic State is the malignant spawn of two major events in the Middle East, one from the outside, one from the inside: the American invasion of Iraq in 2003 and the popular rebellions of the Arab Spring in 2011. Both of these events began with a promise of replacing dictatorship with democracy, but both have produced chaos and tragedy on a terrible scale. (With regard to the Arab Spring, Tunisia is the one fragile exception.) Much of the responsibility falls on the United States, which has meddled in the region for decades, supporting corrupt oil regimes, arming tyrants, and then launching an ill-advised war and botching the consequences beyond repair. But it's a mistake to allow American solipsism—the notion that the United States is the source of all the world's troubles, or the solution to them—to reinforce Middle Eastern victimism. Shiite-Sunni conflict is an indigenous phenomenon; so are jihadi terrorism and the dream of a restored caliphate; so is a social system that marginalizes women, stigmatizes minorities, and binds religion to force in everyday life. To think otherwise is to deny people in the region their own agency. "It's the Iraqis who destroyed their country," a man from Baghdad once told me, "with the help of the Americans, under the American eye."

Ebola, meanwhile, has claimed thousands of lives in West Africa this year, with many more inevitably to come. The virus isn't new—Ebola in human beings is nearly 40 years old—and neither is the reality of a quickly spreading, highly lethal plague. Yet Ebola also counts

among the year's shocks. It has brought home the fragility of entire countries, where economic life has come to a standstill and social stability is threatened. It has illuminated the vast gulf between the world's lucky and its unlucky, who nonetheless can be joined by contagion.

This year of shocks has produced an unmistakable sense of disintegration. What's gone is not peace and stability—those are always ephemeral—but any sense of a framework, an order, a system in which they could be restored. The United Nations, with its vanishing secretary-general, Ban Ki-moon, is barely an afterthought. The Security Council is as blocked and broken as the U.S. Congress, with Russia and China playing the spoiler role of the Republican caucus. NATO seems increasingly like a relic of Harry Truman's era, without the vision or will to play a role in keeping order along its own edges. The Baltic states, full-fledged members of the alliance, unlike Ukraine, seem less than fully convinced that their European allies will come to their defense under Article 5 in case Russian subversion spreads to Estonia—and there are early warning signs that this might occur. It's possible to imagine Putin testing the integrity of NATO, hoping to find that it exists on paper only.

The collapse of global structures has opened the way for bad behavior on the part of elected and unelected regimes around the world. President Recep Tayyip Erdogan has moved Turkey into the ranks of regional powers that are rising with the eclipse of Western influence. His rule is increasingly authoritarian, illiberal, and paranoid, using anti-American rhetoric to silence domestic critics and distract from allegations of corruption, while justifying support for some of Syria's most brutal rebel groups. When the Syrian Kurdish city of Kobani, on the Syria-Turkey border, seemed poised to fall to the Islamic State and the specter

of massacres loomed large, the U.N.'s special envoy for Syria, Staffan de Mistura, appealed to the world for help, and especially to Turkey, which had sealed its border against resupply of the besieged Kurds. "You remember Srebrenica?" de Mistura asked at a news conference, referencing the genocide of more than 8,000 Muslim men and boys in Bosnia in 1995. "We never forgot, and probably we never forgave ourselves for that."

But Turkey didn't want to remember Srebrenica. Even as it pursued a bid for a nonpermanent seat on the Security Council, Turkey ignored the U.N. envoy's plea—it preferred to see the Islamic State crush a Syrian Kurdish group, the People's Protection Units, that it considers an ally of its own separatist Kurdish party. Turkey's actions have made this NATO member a de facto supporter of the Islamic State, which has declared its murderous intent toward citizens of every other member of the NATO alliance. Erdogan is following Putin's lead—what Putin is to Greater Russia, Erdogan hopes to be to the Muslim Brotherhood. It's a strange, and likely self-destructive, turn for a non-Arab, historically secular country that was created after World War I out of the ruins of the caliphate that the Islamic State claims to be restoring. But for now, the initiative is with Turkey, as it is with Russia and China.

In grabbing pieces of Russian-speaking Europe, Putin has counted on this same erosion of international order. He doesn't want to strengthen the United Nations—his dream is of a Eurasian alliance led by Russia. Throwing the West's own arguments back in its face, he justifies the annexation of Crimea by blaming the United States and NATO for setting the precedent in Kosovo in 1999, an air war fought without the blessing of the Security Council, though it was precipitated by an imminent Serbian genocide against Kosovar Albanians, not

by a popular movement against a corrupt leader, as was the case in Ukraine with Putin's client, Viktor Yanukovych. Putin is signaling that he will tear down the security architecture that he claims America started trashing 15 years ago. It's a cynical and disingenuous play that he knows will make the world safer for thugs, but it has enough truth to keep Europe off balance.

The West has agreed on escalating rounds of sanctions against Russia, from ones targeted at individuals to sanctions on financial and other institutions. Unity among the 28 members of the European Union, as well as between Europe and the United States, has held better than many people predicted, but it depends on a dynamic that has thus far favored Putin: There's no possibility of NATO intervention, while Russia intervenes more and more openly with heavy

most governments in Europe, is mired in domestic unpopularity and international confusion, while Putin, Erdogan, China's Xi Jinping, India's Narendra Modi, and other anti-Western nationalists have an increasingly free hand. For an image of American limits in 2014, think of the "#BringBackOurGirls" campaign, joined by Michelle Obama at the White House and a host of dignitaries and celebrities, after the kidnapping of more than 200 Nigerian girls by the terrorist group Boko Haram, whose name translates to "Western education is forbidden." That was in April, and the girls are still missing, while hashtag activism has moved on to Gaza and autism.

Obama's foreign policy in his second term has been hesitant, self-contradictory, at times even feckless—and American hawks blame the year's violence

Bush's presidency. No one could make a serious case that Bush's brand of nationalism, with its waste of American money, prestige, and lives, did anything to check the rise of illiberal regimes, sectarian violence, and extremism any more than did Obama's attempts to manage the decline that followed. The end of a century, including the American century, is always a long time coming.

The postwar international order was underpinned by American democracy in a period of functioning institutions, shared prosperity, and public optimism. The global disorder of this new century is both accompanied and enabled by a sharp deterioration within the United States itself. The U.S. economy, in recession or recovery, is more and more built on a profoundly unfair distribution of rewards; the

Obama's foreign policy in his second term has been hesitant, self-contradictory, at times even feckless—and American hawks blame the year's violence squarely on him for tempting the world's Putins and Baghddadis with displays of weakness.

weapons, armored vehicles, and unmarked troops.

The European Union is another debilitated institution—a collection of mostly stagnant economies joined together by an ailing currency and political dysfunction. Elections in May to the European Parliament in Brussels favored parties on the left and right that want to see the European Union weakened to the point of irrelevance.

Above all, the year's disruptions have revealed the waning of America's ability to control events—not just its willingness and ability to project force, but the attractive power of liberal democracy as a counterweight to authoritarianism and extremism. President Barack Obama, along with the heads of

squarely on him for tempting the world's Putins and Baghddadis with displays of weakness. But as Michael Ignatieff recently wrote, "That would assume that a wiser US administration could have held together the tectonic plates of a world order that are being pushed apart by the volcanic upward pressure of violence and hatred." The Islamic State might have exploited the American exodus from Iraq after 2011, but its strength mainly comes from bad governance and chaos in Iraq and Syria, as well as the unkillable power of jihadism as a Muslim ideology for all grievances. Putin's well-known contempt for Obama might have played a role in the annexation of Crimea, but his first irredentist war—in Georgia in 2008—was launched during George W.

political system, strangled by organized money and partisan extremism, has no answers to the country's deepest problems; large numbers of Americans have lost faith in their children's future. The United States is no longer in a condition to impose its will by asserting or demonstrating its values. Those days, always problematic, are now gone. But the liberal ideas that brought freedom, security, and hope to millions of people around the world in the last century remain essential in this one. America can promote them best if it restores its own democracy to health. ♦

George Packer is a staff writer for the New Yorker and the author of The Unwinding: An Inner History of the New America.

displacing thousands of people, Boko Haram has extended its control over Nigeria's northeast; it now claims a territory about the size of Ireland. State security forces, which are corrupt, mismanaged, and abusive in their own right, have been no match for Shekau's fighters.

As the Islamist group's power grows, Shekau's ambitions also appear to be expanding. He has praised Islamic State leader Abu Bakr al-Baghdadi, and in yet another exultant video, he declared that Allah "commands us to rule the rest of the world, not only Nigeria, and now we have started."



ALEXANDER BORODAI

FOR RAISING A SELF-DECLARED REPUBLIC TO ITS FEET.

Former prime minister, Donetsk People's Republic | Ukraine

When eastern Ukraine's Donbass region declared independence, the self-styled government in Donetsk needed a leader. Unsurprisingly, and to the chagrin of Western powers, it found one in Moscow. "A lot of people from Russia are coming to help," Alexander Borodai, a 42-year-old activist and political consultant, told the *New York Times* after he was appointed prime minister of the Donetsk People's Republic. "I am one of them."

That may be underselling his position: Borodai has been described as "the Karl Rove of Russian imperialism," hailing from a group of ultranationalists whose zeitgeist of a Greater Russia has permeated the Kremlin. Critics insist that he has strong ties to Russian intelligence services—a claim he brushes off but does not deny.

Over the summer, Borodai was a

key liaison and negotiator with both Moscow and Kiev. After the downing of Malaysia Airlines Flight 17, it was Borodai who publicly denied rebel involvement in the crash and dictated when the black boxes and bodies were released. He stepped down after just three months, saying "a genuine Donetsk native" should be in charge. Yet he left a critical mark: As the "grizzled face of the separatist movement," according to the *Washington Post*, Borodai helped a self-declared republic rise firmly to its feet.

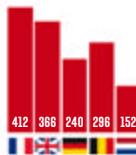
HAJJAJ AL-AJMI, ABD AL-RAHMAN KHALAF AL-ANIZI

FOR SHAKING THE TERRORIST MONEY TREE.

Jihadi financiers | Kuwait; Syria

While the United States has dithered about arming the Syrian opposition, its opponents have wasted no time at all. Throughout 2014, and building upon previous efforts, Hajjaj al-Ajmi and Abd al-Rahman Khalaf al-Anizi drummed up cash for the Islamic State and the al Qaeda-affiliated al-Nusra Front; the men have advanced jihadi fundraising methods, adding handsomely to the militants' revenues from oil sales and extortion rackets.

Anizi has also facilitated the travel of jihadi fighters and, according to the U.S. Treasury Department, has worked with al Qaeda in Iran. Ajmi, a young cleric from a prominent Kuwaiti family, has used social media to elicit funds from hard-line Islamists across the Persian Gulf, urging his Twitter followers to help end government atrocities; his following had swelled to over 470,000 before Twitter suspended his account in August 2014 (weeks later, he rejoined). "Did you know that bringing down Damascus would not cost more than \$10 million?" he asked at a 2012 event in Qatar. "The priority is the support for the jihadists and arming them."



Today, according to the International Centre for the Study of Radicalisation, Western Europeans account for some 18 percent of the foreign-fighter population in Syria, with the most recruits coming from France, Britain, Germany, Belgium, and the Netherlands. The London-based group estimates that between 400 and 1,900 Western fighters are on the front lines. Above, a chart shows the highest estimated number of fighters from each of the countries.

JIHADI JOHN

FOR BEING THE POSTER BOY OF EXPAT JIHADISM.

Islamic State militant | Syria

The videotaped beheading of American journalist James Foley sparked international outrage over both the brutality of the act and the identity of the masked executioner: The militant appeared to be British. Dubbed "Jihadi John" by Fleet Street, he is among the thousands of foreign fighters who have traveled to the Middle East to fight alongside the Islamic State.

Such jihadi migration is nothing new. From the mujahideen to Chechen rebels, Islamist groups have long looked to foreign nationals to swell their ranks. Yet, relying on propaganda, the Islamic State has attracted foreign fighters on a massive scale. As many as 15,000 foreigners, including some 1,900 Westerners, have joined militant groups in Syria, according to some estimates.

Western officials say they have identified Jihadi John, presumed to be the killer of three other hostages—one American and two Britons—whose beheadings have been videotaped. But even if the hooded militant can be tracked down, there will be plenty of foreign recruits to take his place.



BORODAI: BRENDA HOFFMAN/GETTY IMAGES; JIHADI JOHN: WIKIMEDIA COMMONS



The Decision- Makers

MASTERMINDING A NATIONAL ELECTION IN THE WORLD'S LARGEST

democracy. Steering the West's response to Russia's forays into Ukraine. Presenting a plan for reconciliation and accountability in an African country torn along religious lines. Plotting major reforms in one of Europe's most sluggish economies. These are just a few of the diverse, and unenviable, job descriptions of the men and women in this category. Working to give governance a good name, these decision-makers have taken risks, challenged norms, and demanded change.



NARENDRA MODI

FOR ENTHRALLED THE WORLD'S MOST POPULOUS DEMOCRACY.

Prime minister | India

Narendra Modi faced a United States visa ban for nine years, and the European Union ostracized him for 10. The West cold-shouldered the Hindu nationalist for the same reason many Indians distrusted him: his tolerance of sectarian violence in 2002 that left at least 1,000 people—mostly Muslims—dead in Gujarat state, where Modi was chief minister.

But by India's 2014 elections, after years of corrupt and inefficient Congress party rule, Modi had convinced many that his record as a charismatic, business-friendly leader made him just the person to revive India's flagging growth. His speeches drew hundreds of thousands, and he reached millions via 3-D holographic projections.

Despite concerns that his economic vision could widen inequality and that his vigorous nationalism could worsen relations with Pakistan, Modi's Bharatiya Janata Party claimed the country's biggest electoral landslide in three decades. "India has won! ... Good times ahead," Modi tweeted to millions of followers in May. It's too soon to say whether he was right.



ANGELA MERKEL

FOR PARRYING PUTIN.

Chancellor | Germany

Amid the disasters of 2014, the year was notable for the fact that open warfare among major powers did not return to Europe. Although Russia's shadowy war in Ukraine nearly provoked all-out confrontation with the West, catastrophe never came, and much of the credit for that goes to German Chancellor Angela Merkel.

Russian President Vladimir Putin is a wily leader, and it has fallen upon Merkel to manage the former KGB agent. Throughout the crisis in Ukraine, no world leader has talked more with Putin than Merkel. Her Russian is so good that she can correct her official interpreters; Putin's German is equally good, a remnant of his days as a spy in East Germany. Berlin's economic ties with Russia might make Germany more interdependent with Moscow, but they also give Merkel leverage that Washington lacks.

Germany, then, could be the heavyweight capable of containing the Russian bear. But Merkel has been nimble in using her power, embracing sectoral sanctions while preventing Putin from feeling cornered.

AMIT SHAH

FOR ENGINEERING MODI'S LANDSLIDE.

President, Bharatiya Janata Party | India

All successful campaign managers are masters of mass

human organization. But aside from building a formidable campaign machine in India's most populous state, Uttar Pradesh, where he directed the victorious campaign of the Bharatiya Janata Party (BJP), Amit Shah exhibited an almost otherworldly understanding of how to make candidate Narendra Modi appeal to Indians. His deft image management balanced the human with the superhuman. (Modi's famous line—"it takes a 56-inch chest"—referenced the now-prime minister's imposing physique as a way to showcase his leadership ability.)

Like Modi, Shah is controversial. In July 2010 he was incarcerated on various charges, including murder, for his alleged involvement in extrajudicial killings. (In the past few months, Shah has been granted exemptions from appearing in court, though the proceedings in the case are technically ongoing.) But with Modi's support, Shah rose to the powerful post of BJP president in early July. There he will likely remain, serving as the party's Karl Rove and Modi's enforcer.

HASSAN ROUHANI

FOR KEEPING THE DOOR OPEN.

President | Iran

Hassan Rouhani made this list last year for opening a door that would lead to nuclear talks with the United States; he appears again this year because that door remains open. The Iranian president continues to defend the talks vociferously in Iran, beating back a concerted effort from hard-liners to undermine the tentative rapprochement with the West.

Rouhani has remained relentlessly upbeat about the discussions, even as his boss, Supreme Leader Ali Khamenei, has stuck to the anti-American tone that has characterized Iranian rhetoric for decades. Although the president said that Tehran will "certainly" reach an agreement with the P5+1—the United States, Russia, France, Germany, China, and Britain—Khamenei has blamed

the West for creating the Islamic State militant group and has set impossible conditions for the talks, writing that as long as the Americans continue their enmity toward Iran, "interactions with them ... bears no practicality."

Still, Rouhani seems to be doing his best to convince the supreme leader, as well as an Iranian population weaned on three decades of anti-Americanism, that it's time for a new beginning.

CATHERINE SAMBA-PANZA

FOR PICKING UP THE PIECES OF HER COUNTRY.

Interim president | Central African Republic

When Catherine Samba-Panza was selected to lead the Central African Republic in January, violence between Christian and Muslim militias had left thousands dead and hundreds of thousands displaced. Under her predecessor, a former rebel leader, state institutions had basically stopped functioning. Yet Samba-Panza, only the third female president in African history, welcomed her challenging job. She announced a four-point plan in June to integrate youth—who have fed the country's rapacious militias—into economic and political processes, and she launched a dialogue to reduce tensions between Christian and Muslim communities. Demanding government accountability, she introduced three-month trial periods for ministers, and she is laying the groundwork for democratic elections in 2015. (She

has said she will not run.)

The Central African Republic is still in tatters; a U.N. peacekeeping force arrived in September. But Samba-Panza continues to work, as she said during a recent visit to Washington, "to give back hope to each and every person."

LUIS VIDEGARAY

FOR RE-ENERGIZING MEXICO.

Finance secretary | Mexico

Luis Videgaray showed that his reputation as the brains of Mexico's government is no overstatement when a comprehensive energy reform bill he designed was signed into law in August. For the first time in 76 years, direct foreign investment will be allowed in the country's energy sector—a move that is estimated to bring in an additional \$20 billion annually.

Expected to expand the availability of low-cost energy to Mexicans, Videgaray's reforms focus on the sustainability of existing economic institutions, including small Mexican firms, and input quality such as broadband and credit. Markets need a little governmental nudging to find success, he told

the *Economist*: "These markets will not open up by themselves."

Although he was appointed finance secretary in 2012 and spent his first year out of the limelight, Videgaray isn't entirely new to politics. The MIT graduate has worked with President Enrique Peña Nieto since the latter was a state congressman; when Peña Nieto was elected a state governor in 2005, he made Videgaray his finance chief.

AYDAN ÖZOGUZ

FOR REIMAGINING GERMAN CITIZENSHIP.

Integration minister | Germany

Europe is no melting pot. For decades, the continent has struggled to integrate immigrants from Muslim-majority countries, sometimes demonizing them as a demographic threat or relegating them to ghettos that breed radicalism. Aydan Özoguz, Germany's new integration minister, hopes to change all that.

Born to Turkish parents who came to Hamburg as guest workers, Özoguz has risen meteorically in German politics.



Hindu holy men and women line up to vote at a polling station in India.

In December 2013, she became the first Muslim woman of Turkish origin to serve as a state minister, charged with implementing a controversial new law that gives children of immigrants in Germany the right to hold more than one passport.

But her ambitions go beyond any one piece of legislation: She wants Germans to reimagine citizenship itself and embrace a sense of belonging for all, "whatever their name or background," she told DW-TV. "Being German doesn't just mean coming from a long line of German ancestors."



LUIS ALMAGRO, JOSE MUJICA

FOR PROVING THERE'S ALWAYS
ROOM FOR REFUGEES.

Foreign minister; president |
Uruguay

José Mujica is something of a radical, both at home and abroad. The leftist guerrilla turned statesman opted for a small farm over Uruguay's presidential palace, donates about 90 percent of his income to charity, and legalized marijuana. Pursuing an equally provocative approach to international affairs, he has railed against the power elite's obsession with economic growth and has blasted showy United Nations summits.

This year, the president and his

foreign minister, Luis Almagro, set out to show that a country like Uruguay—with its tiny population of some 3 million and gross national income per capita of around \$14,000—could do its part in addressing one of the world's worst crises. In October, Mujica welcomed 42 Syrian refugees to Montevideo. His and Almagro's message? That there are no excuses: Wealthier countries should also step up and provide safe havens to the more than 3 million Syrian refugees.

This group is the first in Uruguay's pilot program offering a path to Uruguayan citizenship; another 78 refugees are expected early next year. "We wanted to earn the right to tell the rest of the world that there are other solutions," Mujica told *USA Today*.

MATTEO RENZI

FOR BUCKING BUNGA-BUNGA
POLITICS.

Prime minister | Italy

Matteo Renzi stormed into Palazzo Chigi in February vowing to "rottamare," or scrap the old order in Italy. At 39, he was the post-Berlusconi "Demolition Man," ready to replace his country's sclerotic politics with business-friendly efficiency (without the bunga-bunga). Renzi's goal was to get Italy's house in order and then use the country's enhanced credibility to take on the European Union's austerity policies.

The effervescent Florentine is finding that Italy's vested interests—its civil service and labor unions among them—are not so quick to yield to his charm. But although his promised reforms have stalled in Parliament and have been opposed even by members of his own Democratic Party, he is weakening the cumbersome Senate. If he can hang onto his office—Italian politics can be notoriously treacherous—he may be the best hope to lift Italy out of its worst economic slump since the 1930s.



Q+A: LUIS VIDEGARAY

SECRETARY OF FINANCE
AND PUBLIC CREDIT, MEXICO

Interview by Julie Schwietert Collazo

It's important to remember that in Mexico there is no single party that ever has a majority in the House or the Senate. For this reason, all reforms require political accord. So what the president did was to open a space for very frank dialogue, one in which we all listened to one another. And it was from that space that the initial reform plan, "Pacto por México" ("Pact for Mexico"), was born.

All of the reforms are important, but the one that I think has the potential to make the greatest impact on the Mexican economy is the package of energy reforms. This set of reforms requires a fairly radical shift in approach with respect to our natural resources—namely, permitting private investment, both domestic and foreign, which opens up competition. The idea is that this will attract capital and technology to this sector. The size of the energy sector in Mexico is just so vast; it has an outsize impact on the rest of the Mexican economy.

We are in the implementation phase of the reforms, but there are some specific successes we can point to in the work that has been done so far. In finance reform, for example, we were committed to making credit more accessible and more affordable, and today we can already see progress. Before, small and medium-sized businesses did not have access to credit. We have changed that. The accessibility of credit has been particularly helpful to small farmers and producers.

I am the first secretary of finance and public credit in 100 years to have also had the experience of having been a representative or senator. That background has been vital to the reform process; it has served me well, allowing me to have a close conversation with legislators.



The Challengers

MASS PROTESTS ROCKED EVERY CORNER OF THE GLOBE IN 2014.

In Kiev and Bangkok, Hong Kong and Caracas, passionate individuals led movements that defied powerful government institutions in the hope of defining new trajectories for entire countries and populations. Similarly, passionate individuals tested the status quo—and some sacred cows—by pushing for Scottish independence from the United Kingdom, exposing the cracks (and hot air) among Silicon Valley's elite, and scaring big banks with a tough, expansive vision of 21st-century financial regulations. Although their goals and tactics may not have been universally lauded, these Global Thinkers were indefatigable.



THOMAS PIKETTY

FOR CRUNCHING THE NUMBERS ON THE NEW GILDED AGE.

Economist | France

The insight of Thomas Piketty, the French economist who has, yes, been described as a “rock star,” is a simple mathematical expression: $r > g$. The rate of return on capital, r , will typically be higher than the rate of economic growth, g . Capital, then, funnels wealth toward those who already have it.

Piketty mined tax data to provide the best-known historical record of wealth concentrations and showed that the United States and Europe have entered a new Gilded Age, with levels of

inequality not seen since before World War I. The book in which Piketty sets forth these conclusions—*Capital in the Twenty-First Century*—is a living symbol of the anxiety this inequality has created in the post-industrial, financialized economy. It spent weeks at the top of best-sellers lists this year, and the book anchored heated dinner-party conversations across two continents for months.

TETYANA CHORNOVOL

FOR RISKING EVERYTHING TO DOCUMENT UKRAINE'S CORRUPTION.

Journalist | Ukraine

Danger was no deterrent for Maidan darling Tetyana Chornovol. A Ukrainian journalist famous for reporting on government corruption, she was beaten by unidentified men in December 2013 after publishing a blog post about a mansion she claimed belonged to

BENNY TAI, JOSHUA WONG

FOR MAKING BEIJING SWEAT.

Co-founder, Occupy Central With Love and Peace; co-founder, Scholarism | China

Hong Kong, once a British imperial prize and now China's financial center, is experiencing its most acute political tension in decades. And Beijing largely blames two men: Benny Tai, a professor at the University of Hong Kong, and Joshua Wong, a college freshman.

Since late September, thousands—and at times tens of thousands—of students, workers, and activists have taken to the streets, protesting the Chinese government's resistance to democracy in Hong Kong. Tai's organization, Occupy Central With Love and Peace, has provided the intellectual framework for the protests; Wong is the youthful, charismatic leader of Hong Kong's most important student movement, Scholarism. Wong and his allies of all ages aim to preserve and advance an identity that is separate from China's.

As of press time, the protests are still ongoing, but will likely soon dissolve or be dissolved. Tai and Wong, however, show that one can stand up to Beijing—even if only for a month or two.



then-Interior Minister Vitaliy Zakharchenko. With her face battered nearly beyond recognition, Chornovol fearlessly accused President Viktor Yanukovych—another target of her investigations—of ordering the assault and asserted that the attack would not dissuade her from going after crooked officials.

After Yanukovych fled Ukraine in February 2014, Chornovol joined the country's new anti-corruption task force but later resigned, citing frustration with the lack of “political will ... to carry out a hard-edged, large-scale war” against graft. In September, she became an advisor to the new interior minister.

Hardship still fails to daunt her: When Chornovol's husband, a fighter with the far-right pro-Kiev Azov Battalion, was killed in eastern Ukraine in August, she wrote in an online newspaper, “FREEDOM or death—we made that choice on Maidan.”

ORIOL JUNQUERAS, ALEX SALMOND

FOR BREATHING NEW LIFE INTO OLD KINGDOMS.

Separatist leaders | Spain; United Kingdom

European separatists are a beleaguered bunch these days. Europe's recent history has seen states inexorably smothered by the prosperous, if stifling embrace of the European Union. Add to that a globalized financial system, and calls for self-rule and devolution feel ever more anachronistic. But in Catalonia and Scotland, nationalist independence movements showed a surprising resurgence in 2014 and caused a rethink of the ever-intensifying centralization of power in Europe.

Scotland ended up voting to stay in the United Kingdom, but the country's independence movement, led by then Scottish National Party chief Alex Salmond, secured hard-fought concessions from Westminster and Prime Minister David



Cameron. Although independence didn't come to the Scots, they likely will now have more say over their own affairs.

In Catalonia, Oriol Junqueras, leader of the Republican Left of Catalonia, has helped push the region's president, Artur Mas, into a headlong confrontation with Madrid over independence or at least greater political and economic autonomy. Madrid has steadfastly refused to acknowledge Catalonia's aspirations—

which, at press time, had been reduced to a symbolic vote that the Spanish Constitutional Court suspended on Nov. 4—but the separatist fires are still burning in Spain's economic engine.

MARINE LE PEN

FOR GIVING FRANCE'S FAR-RIGHT ITS MOMENT.

Politician | France

On May 26, French voters awoke to what Prime Minister Manuel Valls called "an earthquake." Marine Le Pen had used image management and opportunistic timing to lead her extreme-right National Front party to a historic victory in the European Parliament elections, taking almost 25 percent of the French vote—more than either of France's two major parties, whose popularity is dwindling. In September, the National Front went on to win its first-ever French Senate seats.

Le Pen shrewdly distanced herself from her anti-Semitic father, the former National Front leader, and rebranded her party as a refuge from political dysfunction. She voices disdain



Demonstrators demanding democratic reforms take to the streets in Hong Kong on Oct. 28, 2014. The protests, also known as the "Umbrella Revolution," began in late September.

for racism, despite a heavily anti-immigration platform, and keeps her rhetorical guns trained on Brussels. Le Pen has become something of a standard-bearer for Europe's far-right, Euroskeptical forces—a model for how they, too, can become serious political contenders.



THE FEMALE FIGHTERS OF KURDISTAN

FOR DEFENDING MORE THAN THEIR HOMELAND.

Combatants | Iraq, Syria

As Islamic State fighters swept through large areas of Syria and Iraq this year, Kurdish forces met

them on the front lines. Among those resisting the militants' advance were thousands of female combatants, including those from the Peshmerga, the armed forces from Iraqi Kurdistan, and Syria's People's Protection Units (YPG).

The Western media have obsessed over these women, but their significance goes well beyond their gender on the battlefield. For these fighters, the Islamic State is only one front in a war.

Although Kurdish areas in the Middle East are often perceived to be progressive in their gender politics, that's not quite the case for some communities, particularly in Iraq, where female representation in government is limited, divorced women are stigmatized, and rural families still resort to honor killings. For many women, Kurdish military institutions offer refuge and are a way to resist this patriarchy. Not only are the soldiers required to be literate, but they are also schooled in politics and human rights as part of their military training.

"They've taken up arms and gone to battle to protect Kurdistan," Col. Nahida Ahmed Rashid, a Peshmerga commander, told PBS, "but also to say that there's no difference between men and women."

35%

Of the Kurdish combatants fighting in Syria, the YPG estimates that 35 percent—some 15,000—are women.



ANXIETY IN THE AGE OF INEQUALITY

Why Thomas Piketty's blockbuster book *Capital* struck a nerve in America and beyond. **BY GILLIAN TETT** ILLUSTRATION BY EMMANUEL POLANCO

UNTIL RECENTLY, IT WAS A SAFE assumption that it would be impossibly hard to sell a book by an obscure left-wing French intellectual to Americans, especially a 700-page tome. No longer. This spring Thomas Piketty, a 43-year-old Paris-based economist and expert on wealth and inequality, published *Capital in the Twenty-First Century* in English. The book compares how wealth patterns have evolved in

different countries over the past few centuries and points out that inequality has been rising almost everywhere, including in the United States. Piketty's academic publisher initially expected to sell only a modest number of copies. But *Capital* shot into best-sellers lists. Sales of the book were so high that it even beat out two literary adaptations of *Frozen*, the hit Disney film. When Piketty appeared at literary events to discuss his work, he attracted such crowds that American media

dubbed him a "rock star" economist.

Piketty's success is a startling sign of how the zeitgeist can sometimes shift—or, more accurately, how the framework for public debate can be reshaped suddenly to make ideas that once seemed almost irrelevant go mainstream. A decade ago, during the heady days of the credit boom, inequality was infrequently discussed with passion outside the ranks of the political left. But in 2014, it became ubiquitous.

When the World Economic Forum held its annual general meeting in Davos, Switzerland, in January, it revealed that a yearly survey of its members had ranked inequality as the biggest challenge stalking the global economy in 2014. It topped climate change and banking crises, among other issues, even though this was the first time inequality had ever appeared in the survey. Around the same time, an opinion poll by the Pew Research Center showed that two-thirds of Americans think the gap between rich and poor is widening, and a report released in September showed that almost half consider this to be a “very big” problem for their country. The concern is markedly higher than it was before the 2008 credit crisis.

Policymakers are echoing and reinforcing this focus on inequality. In October, at a conference in Boston, U.S. Federal Reserve Chair Janet Yellen said, “Inequality in the United States greatly concern[s] me,” before devoting part of her presentation to the topic, which was previously considered largely taboo for central bank governors. President Barack Obama has also cited the issue repeatedly in his political speeches. More surprisingly, key voices in the Republican Party have echoed the theme (though they are apt to blame inequality on the poor’s failure to work hard enough, rather than on government policies or certain structural patterns that Piketty identifies).

Worldwide, according to the Factiva database of global press sources, the word “inequality” cropped up 28,000 times in the second quarter of 2014; back in 2006, during the height of the credit boom, the word only appeared 3,000-odd times.

Why has interest in inequality exploded? In part, the trend reflects tangible economic facts: Inequality of incomes and wealth has grown in recent decades. Back in 1980, according to economist Emmanuel Saez, the top 1 percent of Americans garnered “just” 10 percent of all income; these days, he finds, the ratio is around 22 percent because salaries have become less equal and the wealthy

have enjoyed capital gains. This divergence was partially concealed during the credit boom because middle-class Americans borrowed heavily to maintain consumption and offset their stagnant wages. To a certain extent, this was also true in places such as the United Kingdom.

When the bubble burst, however, the divergence was revealed with cruel clarity. Since that time, the climate of ultra- loose

enjoying prosperity. Namely, rich people spend a far smaller proportion of their income than poorer families do. To put it crudely, it is harder to inflate an economy on the backs of luxury goods than on those of middle-class cars.

More importantly, the growing gap between the haves and have-nots creates new political risks that cannot be ignored. A recent feature of the political

Western economies do start to grow again, the anxiety about political risk, cohesion, and credit may seep away. After all, people care less about how a pie is being divided if that pie is expanding fast. But don’t bet on that happening anytime soon.

To understand why, take a look at work by someone whom, unlike Piketty, most pundits do not know: W. Brian Arthur. An economist affiliated with the Palo

As the wealth divide widens, it becomes less clear to the poor that they have a stake in preserving the status quo.

monetary policy has further twisted the knife: The Bank of England, for example, calculates that the richest 5 percent of Britons have captured 40 percent of the benefits of quantitative easing since 2009. The pattern in the United States is almost certainly similar, if not more extreme, though the Federal Reserve has not hitherto had the courage to publish comparable research.

But raw numbers alone do not fully explain the new zeitgeist. The shifting debate on inequality also reflects a stealthy change in how the craft of economics is perceived. Back during the credit boom, economics was presumed to be a quantitative field: Anything that really mattered in policy terms, it was thought, could be plugged into a spreadsheet or algorithm. The most important digits pertained to productivity or growth; a big GDP number was considered the holy grail.

These days, however, it is clear that these digits aren’t the only things that matter. The quality of growth and the distribution of its benefits are important too. A world that is growing, in economic terms, but doing so in a profoundly unequal manner behaves differently from other, previous models. Think about spending: When most of the gains from wealth are concentrated in the hands of the rich, those individuals’ propensity to spend is different from the pattern that arises when the middle class is

landscape in the Western world has been a rise in anti-establishment parties, be it the Tea Party in the United States, the National Front in France, or even the independence movement in Scotland. These parties and their popularity are born from, among other things, economic distress, emergent forms of local identity, and people’s enhanced ability to organize themselves via social media. But inequality plays a role too: As the wealth divide widens, it becomes less clear to the poor that they have a stake in preserving the status quo, and mainstream politicians, in turn, struggle to create sensible, long-term trade-off strategies for the economy.

In short, what matters today in economics is not simply data, but questions of social cohesion and trust—or “credit,” in the old-fashioned Latin sense. Traditionally these “soft” issues were considered the preserve of social scientists, not economists. But it is rapidly becoming clear that they are important to economic growth. It is little wonder that many of Wall Street’s largest banks are hiring analysts skilled at discussing cultural and political trends or that ratings agencies such as Standard & Poor’s are placing a new emphasis on “social” factors, such as perceived inequality, when they analyze economic and fiscal risks.

Perhaps this shift in the debate will turn out to be temporary. If

Alto Research Center and the Santa Fe Institute, Arthur analyzes the impact of digitization on the economy. He estimates that if all the economic activity now performed by digital networks around the world, without any human intervention, were added up, it would soon be equivalent to the economic output of the entire U.S. economy. This activity is replacing a vast swath of middle-class jobs, leaving most gains of growth in the hands of a skilled, highly paid elite—and it is only trending upward, with no end in sight.

Or, to put it another way, to understand why Piketty’s book struck such a chord in 2014, think about how *Capital* has been sold. Once upon a time, it would have been retailed predominately by salesclerks staffing bookstores; today it is as likely to be sold online, with just a few low-paid warehouse staff and postal workers handling copies. No wonder anxiety is the new mood of the age.

The genie of inequality cannot be stuffed easily back into the bottle. Piketty’s book is a reminder that what’s needed, above all else, is an honest debate about another issue that has hitherto been unmentionable, especially in America: a bit more wealth redistribution. ♦

Gillian Tett is a columnist and the U.S. managing editor for the Financial Times.

Banking Committee; and Federal Reserve Vice Chair Stanley Fischer has praised her proposed reforms, which could drastically reduce government loans when the next financial crisis rolls around.

BENJAMIN LAWSKY

FOR BEING WILD WALL STREET'S TIN STAR.

Regulator | New York City

Despite the damage done by the 2008 financial crisis and the evidence implicating bank executives in the economy's unraveling, no Wall Street CEOs ever saw jail time. But now a once-obscure New York state regulator is finally going after big banks with zeal.

Benjamin Lawsky, head of New York state's Department of Financial Services, went up against Credit Suisse for helping rich Americans dodge their taxes, and in May the banking giant took the rare step of pleading guilty to criminal wrongdoing. Lawsky also has attacked Standard Chartered for laundering money for Iran, and in August he slapped the bank with a \$300 million fine for failing to crack down on such transactions. He's now working to regulate virtual-currency companies operating in New York.

As a state official, Lawsky has been accused of elbowing in on federal regulators' turf, but where they have often shown a remarkable lack of initiative, Lawsky hasn't been afraid to play hardball with big banks, threatening to strip them of their New York banking licenses.

LEOPOLDO LÓPEZ

FOR UPENDING THE TACTICS OF VENEZUELA'S LOYAL OPPOSITION.

Leader, Popular Will | Venezuela

Leopoldo López, the leader of Venezuela's opposition Popular

THULI MADONSELA

FOR BITING THE HAND THAT APPOINTED HER.

Public protector | South Africa

When he appointed her public protector in 2009, South African President Jacob Zuma couldn't have known that he would wind up at the business end of Thuli Madonsela's formidable will and tactical wiles.

Since then, Madonsela has deftly wielded the tools of her office, from public shaming to a quiet word in the ear, while building her reputation as a fearless advocate. In March, she issued a fat report aimed at Zuma himself, venturing "where most others fear to tread," as the South African news site the *Daily Maverick* put it. The report found that Zuma had unduly benefited from state-funded improvements worth \$23 million to his estate.

Madonsela's anti-corruption crusade makes her a darling of the West (in October, she won Transparency International's Integrity Award). But at home her efforts have brought insults and scorn from those who fear her most: the powerful.



In 1994, **Thuli Madonsela** declined a scholarship offer from Harvard University so that she could help draft her country's landmark constitution.





Venezuelan security forces clash with anti-government protesters in Caracas.

Will party, is the chief thorn in Caracas's side. The figurehead of anti-government protests that erupted in early 2014, López called his supporters to the streets with the hashtag #LaSalida, meaning "the way out." Demanding new policies to combat high crime rates, record inflation, and food shortages, thousands amassed. The scene turned violent when demonstrators clashed with police, leaving four people dead (the death toll would later rise to more than 40). The government, in turn, accused López of terrorism and arrested him on Feb. 18. In jail ever since, he now faces up to 13 years in prison on charges of seeking to topple President Nicolás Maduro.

While many of Maduro's critics favor dialogue with the current government as Venezuela's path forward, López's more confrontational approach has resonated. According to a recent poll, his approval rating has risen above 49 percent. That makes him—even behind bars—the most popular figure in Venezuela's long-splintered opposition.

SUTHEP THAUGSUBAN

FOR ORCHESTRATING THAILAND'S LATEST COUP.

Former chief, People's Democratic Reform Committee | Thailand

A former Thai deputy prime minister for security affairs, Suthep Thaugsuban has been embroiled in a range of scandals, including his role in a violent crackdown on protesters in 2010 that left some 90 people dead. Yet his recent feat of political mobilization may overshadow even that taint. In late 2013, he prompted thousands into Bangkok's streets to demand the resignation of then-Prime Minister Yingluck Shinawatra, the sister of exiled former Prime Minister Thaksin Shinawatra. Suthep's supporters destabilized the capital for months and ultimately helped oust Yingluck's government.

Although the Thai military remains in power, things didn't end well for Suthep: The ruling

junta briefly detained him following the coup; he now lives as a monk in southern Thailand, far from Bangkok politics. Nevertheless, his backroom dealings, his charisma, and his speechifying helped eradicate what he called the "political machine of Thaksin."

KARA SWISHER

FOR PULLING BACK THE CURTAIN ON SILICON VALLEY.

Journalist | San Francisco

If there is a scribe of Silicon Valley, it's Kara Swisher. A longtime technology journalist, Swisher covered AOL back when it was run behind a Virginia car dealership; today she is feared by tech titans the world over for her uncanny ability to expose their dirty laundry. She helped bring down Mozilla CEO Brendan Eich for his opposition to same-sex marriage, and she made Facebook founder Mark Zuckerberg squirm during a public interrogation about his company's privacy practices.

This year, after breaking with Rupert Murdoch's News Corp,

Swisher launched Re/code, a technology news and conference start-up. Known for her fearlessness and wit, Swisher writes to inform and empower technology consumers. She also has emerged as an outspoken advocate for women in the industry. "You know Apple is run by men when they call it an iPhone 6 Plus and it's only 5.5 inches," she said on a panel in early October.



HOUCINE ABASSI

FOR GETTING TO "YES" IN TUNISIA.

Union leader | Tunisia

Hocine Abassi tirelessly and cunningly unified moderates and Islamists, settling entrenched grudges and using the threat of protests to secure the passage of the road map to Tunisia's new political order. Without Abassi, the country's new constitution, signed into law on Jan. 27, may not have been.

Abassi was a political unknown before becoming the secretary-general of one of Tunisia's most powerful trade unions, the Union Générale Tunisienne du Travail (Tunisian General Labor Union). Then, in 2013, he directed hundreds of hours of arbitration to distill a consensus. The road map led to the dismissal of the entire cabinet, the appointment of a new prime minister, and the creation of an independent election commission. That Tunisia is the only post-Arab Spring country in relatively stable condition can be credited largely to Abassi's gifts as a unifier.



The Naturals

LOCATING PROMISE AMID CONTRADICTION IS THE KEY TO

environmental progress for these Global Thinkers, who are showing that it is possible for a large, bustling city to be free of cars, for a small tribe to shield its homeland from powerful energy interests, and for trees—just trees—to protect a country from catastrophe. There is much left to learn, and even more to respect, about the natural world. These individuals serve as constant reminders of what it takes not just to live on Earth, but to thrive.

AKIRA MIYAWAKI

FOR PLANTING TREES TO DEFEND AGAINST TSUNAMIS.

Botanist | Japan

The 2011 tsunami in Japan overwhelmed concrete barriers along the country's coastline and destroyed some 120,000 buildings. Yet nearby coastal Shinto shrines, nestled in forests, remained largely untouched. To botanist Akira Miyawaki, this showed that trees could be the keys to averting future catastrophe.

Miyawaki has been restoring forests for decades and has been involved with planting some 40 million trees in 15 countries. Now, in his home country, he is using tsunami debris to construct beds in which to plant oak and other tree species native to Japan—together the trees will act as a tidal-wave shield. Under the banner of the Great Forest Wall Project, at least one forest has already been completed in a city near Fukushima; and over 10 years, some 90 million seedlings will be planted. Miyawaki also hopes to export the shield model to other countries with vulnerable coastlines.

"Forests are life itself," Miyawaki told the Tokyo-based environmental group Japan for Sustainability in 2011. "The life for surviving tomorrow begins with creating true 'forests of life.'"



RUTH BUENDÍA

FOR SAVING A HOMELAND BY LETTING A RIVER RUN.

Activist | Peru

The Asháninka people have lived in South America's Ene River valley for centuries, surviving Spanish conquest and civil war. But that nearly changed in 2010, when the governments of Peru and Brazil agreed to build hydroelectric dams that would have produced jobs and energy in the region—and also would have flooded the indigenous group's homeland.

Enter Ruth Buendía. As president of the organization Central Asháninka del Río Ene, Buendía has united her people in a campaign against the dams. She has filed lawsuits insisting that both national and international law require authorities to consult the Asháninka before starting projects that affect the group—and she has kept the dams at bay for four years. For her exceptional activism, Buendía received the prestigious Goldman Environmental Prize this year.

Buendía isn't a lawyer; she only finished high school at age 25. "Anger," she said after being awarded the prize, "motivated me to defend my people."

KATHARINE HAYHOE, PARTHA DASGUPTA, VEERABHADRAN RAMANATHAN

FOR KEEPING THE FAITH IN THE FIGHT AGAINST CLIMATE CHANGE.

Atmospheric scientist; economist; atmospheric scientist | Lubbock, Texas; United Kingdom; San Diego

In fighting the ill effects of climate change, scientists and religious leaders might seem like awkward partners. But for researchers Partha Dasgupta and Veerabhadran Ramanathan, as well as self-proclaimed "climate change evangelist" Katharine Hayhoe, science and religion don't have to be at odds over global warming. In fact, they may have common cause.

Hayhoe, of Texas Tech University, has been aligning religion and conservation for years. With her evangelical pastor husband, in 2009 she published *A Climate for Change: Global Warming Facts for Faith-Based Decisions*. Today, she continues to argue that protecting natural resources is in line with conservative Christian values and has emerged as the most prominent religious climate communicator in the United States. Dasgupta, of Cambridge University, and Ramanathan, of the University of California, San Diego, made ripples in September when *Science* published the duo's call for religious leaders to evangelize for the planet. Earlier this year, the scientists had met with Pope Francis at a Vatican sustainability conference.

"The transformational step," wrote Dasgupta and Ramanathan, "may very well be a massive mobilisation by the Vatican and other religions for collective action to safeguard the well-being of both humanity and the environment."



Speaking about herself as a Christian and a scientist, Katharine Hayhoe told PBS, is "like coming out of the closet."



EXTREME HEIGHTS

Just how fast is the world approaching the demise of humanity?

BY BILL MCKIBBEN ILLUSTRATION BY EMMANUEL POLANCO

AT TIMES 2014 SEEMED LIKE AN exercise in extremity, a test to see just how far already terrible trends could be pushed. The violent world to which people,

sadly, have become accustomed felt even uglier when the Islamic State began beheading prisoners with knives and posting videos of the murders online. Meanwhile, as poor people around the globe continued to die of preventable

diseases, the ghastly Ebola epidemic emerged, claiming thousands of lives and turning whole countries into de facto no-go zones.

Then there was the heat. Although less high-profile than

the Islamic State or Ebola, this year's temperatures were measurably extreme—and their importance was unquestionably profound: Unless something remarkable and unexpected happens this December, 2014 will rank as the hottest year since humankind started officially recording temperatures in the late 19th century. The year boasted the warmest May, June, August, and September ever recorded.

That global warming is happening isn't news, of course. Humanity's relatively short spree of burning oil, natural gas, and coal has already changed the pH of every ocean, melted most of the Arctic's summer sea ice, and set the Earth's greatest glaciers oozing. Put another way, humans have taken the biggest physical features on the planet and broken them. The record heat of 2014, however, coupled with other recent developments, indicates that this devastation isn't just getting worse—it may be unstoppable.

In May, two studies released just a few days apart reached the same conclusion: Global warming has reached the point where the great West Antarctic Ice Sheet is now "destabilized" and its eventual melt "irreversible." The looming consequence will be a 4-foot rise in global ocean levels. "This is really happening," Thomas Wagner, a NASA researcher who worked on one of the studies, told the *New York Times*. "There's nothing to stop it now." Emphasizing just how big a deal this finding is, a writer for the *Washington Post* noted, "Years from now, when scientists look for a precise moment when the Earth's climate began to inexorably change, they may mark this week."

There were plenty of other examples of extreme climate events in 2014. The American West, for instance, is in the midst of a drought so severe researchers estimated in midsummer that the region had lost 63 trillion gallons of groundwater to evaporation. While the drought

has certainly stoked political debates, particularly in California, about who controls water resources and how, imagine if such an intense dry spell had occurred in a far less stable place. Scholars have made it clear that one contributing factor to the onset of war in Syria was a record drought that drove

with more than 300,000 people streaming down Sixth Avenue—the biggest demonstration about any issue that the United States had seen in some years. Joining the grassroots was U.N. Secretary-General Ban Ki-moon, who told a news conference, "We stand ... on the right side of this key issue for our common future."

will. If that political will were mustered, change could spread rapidly. On the other hand, the transition to a world without fossil fuels could drag on too long, to the point where carbon dioxide overwhelms the planet's climatic system. In October, Mark Carney, governor of the Bank of England, pointed out

Unless something remarkable and unexpected happens this December, 2014 will rank as the hottest year since humankind started officially recording temperatures in the late 19th century.

millions of people off farms and into cities, an event that one expert has called "the worst long-term drought and most severe set of crop failures since agricultural civilizations began in the Fertile Crescent many millennia ago." Sooner or later, in other words, climate changes history.

What can be done in the face of the seeming inevitability of environmental calamity? In short, plenty. Great ideas are represented on this list of Global Thinkers, from making Helsinki (and eventually other major cities) free of personal cars, to mitigating the impact of tsunamis and storms by planting more coastal trees, to organizing local populations against powerful interests to block dam construction, mining, and other environmental dangers. There are also wonderful communicators, whose work brings new publics into conversations about global warming: Katharine Hayhoe, for instance, has shown great skill in reaching evangelical Americans, a group traditionally resistant to hearing the climate change message.

What's more, 2014 marked a turning point in the scale and impact of the grassroots fight against climate change. On Sept. 21, demonstrations in 2,800 cities around the planet culminated in a massive march in Manhattan, which I had a hand in organizing,

That same day, in a late-night announcement at the Cathedral Church of St. John the Divine, the Rockefeller Brothers Fund announced that it was beginning the process of divesting from fossil fuels. Great universities, including Stanford, have already taken this step, and so have some huge religious bodies. For instance, the World Council of Churches, which represents more than 500 million Christians, announced in midsummer that it would start divesting its coal, oil, and gas holdings. But when a fund set up by the Rockefeller family, which accumulated the greatest original oil fortune the world has ever known, decides that its traditional investments are both immoral and unwise, a tide has started to turn.

Perhaps one day historians will decide that Sept. 21, 2014, was the day that marked the beginning of the end of the fossil fuel era.

The question is how fast that end will come, and in the answer probably rests the fate of humanity. Theoretically, the end could come fast enough to matter. In another 2014 record, there were days this summer when Germany generated three-quarters of its power from the wind and sun, demonstrating that what the world lacks in addressing climate change is less technical prowess than political

that if catastrophic climate change is to be avoided, the "vast majority" of the planet's fossil fuel reserves must be considered "unburnable" starting now. That would conflict, however, with the business plans of major players in the world's richest industry, from Gazprom to Exxon Mobil to Shell to Coal India to Shanxi Coking. In other words, shutting off the tap cold turkey is not going to happen.

Even finding a moderate pace at which it's possible to at least ameliorate the worst consequences of what humanity has done to the environment can feel like an impossible fight. But as this year demonstrates, those demanding a better, cleaner world, including this category's Global Thinkers, have a big ally on their side: Mother Nature. Powerfully and inexorably, whether growing hotter, sloughing off ice, or withholding water, she keeps showing the folly of humanity's ways. Above all, perhaps 2014 will go down in the books as the year when the costs of short-term thinking truly began to sink into people's brains and inspire action. It would be a valuable shift—extremely so. ♦

Bill McKibben is a writer and environmentalist. He is a scholar in residence at Middlebury College in Vermont.

IOANE TEITIOTA

FOR ADDING "CLIMATE REFUGEE" TO THE LEXICON.

Climate change refugee | New Zealand

Located about 1,200 miles south of Hawaii, the island nation of Kiribati faces a grim future: Composed of 32 atolls and one island—which average only about 2 meters above sea level—it is among the countries most vulnerable to devastation from climate change. Given the impact of rising sea levels and increased danger from storm surges, some have predicted that the country will become uninhabitable in as little as 30 years. But native Ioane Teitiota argues that it is unlivable now.

Teitiota introduced the term "climate refugee" last year, when he requested asylum in New Zealand, arguing that not only had high tides destroyed the fisherman's livelihood, but unsanitary water and rising tensions among locals had made the island too dangerous for his family. In seeking refuge, Teitiota insistently focused the world's attention on the victims of rising tides and their need for legal remedies.

Teitiota failed to convince New Zealand to grant him refugee status in 2013 and his appeal was shot down in May of this year, but his quest isn't over. His lawyer, Michael Kidd, says they are considering taking his case before the U.N. Human Rights Committee in Geneva. If successful, he will be the first climate refugee in the world.

JOHN KOVAC

FOR PROVING THAT IT ALL STARTED WITH A BANG.

Astronomer | Cambridge, Mass.

At the moment of the Big Bang, the universe suddenly expanded with a massive burst of energy,

faster than the speed of light. So goes the decades-old theory of cosmic inflation, for which John Kovac and his collaborators—using a telescope perched on the South Pole—provided hard evidence for the first time this year. They documented traces of that moment in swirls of polarized light in the background radiation that suffuses the cosmos.

If Kovac's findings hold up—and early indications look good—they will be remembered as one of the greatest achievements in the history of physics. Inflation explains one of the enduring paradoxes of modern physics: why the universe expanded so rapidly and with such a uniform temperature. That the answer lay in swirls of microwave radiation is itself a form of poetry.

SONJA HEIKKILÄ

FOR BUNDLING TRANSIT ON DEMAND.

Transportation engineer | Finland

What if a city's entire transportation network—subways and buses, Uber and Lyft, bike sharing and even ferries—could be accessed from a single app with a single payment system? People would have less need for cars, which could mean fewer emissions and a cleaner city, not to mention territory reclaimed from parking decks and street spaces.

Finnish engineer Sonja Heikkilä dreamed up this very transportation infrastructure for the 21st century. Called "mobility on demand," the 24-year-old's idea is to bundle various modes of travel and allow customers to compare options with the touch of a screen. In her vision, as she told *Business Insider*, a city's transportation market would also be structured to avoid monopolies, with "several private companies running the mobility operator business."

Helsinki is already moving forward with Heikkilä's plan, designing pilot programs for 2015 and aiming to have mobility on demand fully in place by 2025.

ALETA BAUN

FOR MOVING A CAMPAIGN OFF THE ROCKS AND INTO THE HALLS OF POWER.

Environmental activist, lawmaker | Indonesia

For more than a decade, Aleta Baun battled marble mining in West Timor. A member of the Molo, an indigenous people who traditionally venerate their natural habitat, she organized demonstrations against the marble industry's environmental impact. In one protest, more than 100 women—including Baun, who has faced harassment and even death threats—spent a year weaving cloth while sitting on rocks at a mining site. Her campaign was ultimately successful: By 2010, marble-mining companies had withdrawn from four sites in West Timor.

Now Baun, who won a 2013 Goldman Environmental Prize, is moving her fight off the rocks. This April, the woman known as "Mama Aleta" won a seat in the parliament of her home province, which has a wealth of natural resources in addition to marble, including gold, oil, and gas. She hopes to influence policy—and take on other companies if necessary. "I'm quite sure it will bring me much more challenges and threats," she said of her election, speaking to the Thomson Reuters Foundation. "If anyone kills me, I would accept it."

Andrew Lange,
John Kovac's
mentor at the
California Institute
of Technology,
inspired the young
Kovac with one
question: "How far
can we see?"





The Innovators

IN TODAY'S WORLD, INNOVATIONS EMERGE AT A RATE THAT IS nothing short of fast and furious. And while some inventions may be cool, sleek, and handy, others have the capacity to transform entire fields and individual lives. The scientists, engineers, and entrepreneurs in this category are developing rapid, comprehensive blood tests that could change the face of preventive health. They are providing digital educational tools to children in Africa. They are showing how humankind can explore the universe on a budget. They aren't just making new things; they are defining the contours of humanity's future.





JENNIFER LEWIS

FOR SHOWING HOW INK COULD RESHAPE THE FUTURE.

Materials scientist |
Cambridge, Mass.

Nowadays, it's fairly easy to 3-D print a model of the U.S. Capitol or a smartphone case. But what if 3-D ink did more than help humans build basic things?

Materials scientist Jennifer Lewis is developing a broad range of functional "inks" that contain ingredients ranging from human cells to metal compounds. These inks could bring 3-D printing to the cutting edge of various fields, from renewable energy to biomedical engineering. With her team at Harvard University's School of Engineering and Applied Sciences, Lewis has printed materials that mimic the lightweight strength of balsa wood for potential use in wind turbines and batteries that could streamline the assembly of small electronics. In February, her team reported that it had printed cellular tissue constructs with embedded blood vessels—a step toward the manufacture of artificial organs.

Lewis's work shows that 3-D printing won't just change how people make things. It will also change what, exactly, people can make.

The trail to the discovery of CRISPR/Cas9 was an unexpected one: It began with a search for a more effective way to produce yogurt.

Janet Iwasa enhanced her skills in complex 3-D animation at a Hollywood training program for workers in the film and video game industries. She was the oldest student and the only woman in the course.

MYLSWAMY ANNADURAI

FOR PUTTING INDIA INTO ORBIT ON THE CHEAP.

Aerospace engineer | India

In September, India's space agency brought an orbiter to Mars for less than the cost of a high-end Hollywood blockbuster. Under the direction of Mylswamy Annadurai, the \$74 million Mars Orbiter Mission (MOM) set a string of records: It was the cheapest interplanetary voyage ever, the first successful Asian mission to Mars, and the only national Mars project to reach the red planet on its first try.

Annadurai's work at the Indian Space Research Organisation offers a new model for space exploration. Lightening payloads, limiting experimental goals, and condensing production schedules, as MOM did, could help other space agencies slim the fat budgets that plague so many missions. NASA's most recent Mars orbiter, for example, cost around \$671 million. For about a tenth of that, Annadurai's team showed that cosmic achievements don't have to break the bank.

often resort to simple renderings—a virus might become a circle, a membrane a line. Janet Iwasa, lead inventor of the Molecular Flipbook, hopes to change that by helping researchers render molecular processes in 3-D.

Iwasa's Flipbook, which relies on open-source technology, streamlines the animation process so that new users can create and share a project within hours, accelerating the research process and encouraging scrutiny of hypotheses more detailed than 2-D models could ever allow. With a research team at the University of Utah, Iwasa is now animating the life cycle of HIV—specifically, how the virus interacts with human immune cells. Much about HIV's life cycle remains unknown, and detailed representations could guide scientists to new research questions.

In this and other ways, Iwasa's work might literally add a new dimension to the study of microbiology.

EMMANUELLE CHARPENTIER, JENNIFER DOUDNA

FOR PIONEERING A GENETIC SCALPEL.

Biologists | Germany; Berkeley, Calif.

In 2012, Emmanuelle Charpentier and Jennifer Doudna were among the co-authors of a seminal paper on a gene-editing technique that could produce new treatments for diseases ranging from HIV to Huntington's. Known as CRISPR/Cas9, the approach allows scientists to snip genetic code letter by letter with a programmable enzyme. It's the most versatile and precise gene-editing method discovered yet, and it promises revolutionary, if controversial, treatments for medical problems long thought intractable. Scientists could potentially disrupt, or knock out, genetic



JANET IWASA

FOR ADDING A NEW DIMENSION TO MICROBIOLOGY.

Molecular animator |
Salt Lake City

How can you visualize something too small to see? Biologists

conditions like Down syndrome from embryos in vitro, for example, or they could edit the DNA of blood cells of adults affected by sickle cell anemia.

Today, on opposite sides of the Atlantic, Charpentier and Doudna are separately racing to develop CRISPR/Cas9 into commercial therapies. Backed by millions of dollars in venture capital, Doudna's Massachusetts-based firm, Editas Medicine, and Charpentier's CRISPR Therapeutics, in Switzerland, are staffed with some of the biggest names in genetics. Former colleagues are now in competition. No matter who pulls ahead, medicine stands to gain.

BOAZ BARAK, ALEXANDER GLASER, ROBERT GOLDSTON

FOR VERIFYING THAT WHICH CAN'T BE SEEN.

Senior researcher, Microsoft; physicists | Cambridge, Mass.; Princeton, N.J.

In 2010, Russia and the United States inked the New Strategic Arms Reduction Treaty, agreeing to limit their number of deployed strategic nuclear warheads and reducing their inventories to 1,550 each by 2018. A great move toward a peaceful world, but a tricky one for future weapons inspectors, who aren't allowed access to specific information about the warheads that are to be destroyed—that information is classified.



Scientists and engineers work on a Mars orbiter vehicle at the Indian Space Research Organisation's satellite center in Bangalore.

Historically, this problem has been resolved by trashing the systems that deliver the warheads—bombers, submarines, and ballistic missiles. But once nuclear talks pivot from strategic to tactical and non-deployed weapons and focus on actual warheads rather than delivery systems, verification becomes even trickier.

So Boaz Barak, Alexander Glaser, and Robert Goldston designed a “zero-knowledge” verification system to compare a warhead under inspection with a known true warhead without ever revealing top-secret information about the device's composition. How? By beaming high-energy neutrons into the warhead being investigated. If the number of neutrons that passes through it is the same as that for an actual known warhead, it's real. If not, it's a sham.

The trio's work, published in *Nature* this year, could “change the course of nuclear disarmament worldwide,” Bruce Blair, co-founder of Global Zero, which aims for the elimination of all nuclear weapons, said in a statement.

FLORENT BOUDOIRE, ARTUR BRAUN, EDWIN CONSTABLE, JAKOB HEIER, RITA TOTH

FOR CAPTURING THE POWER IN MOTH EYES.

Materials scientists | Switzerland

This year, five researchers in Switzerland unlocked a major advance in solar technology by turning to two unlikely sources: rust and moth eyes.

When exposed to sunlight, rust-based photoelectrodes can split water into its elemental components, producing clean, storable hydrogen. The method could revolutionize hydrogen-fuel production and help skirt the storage problems typically associated with solar power, but there's a catch: It only works when rust is layered paper-thin, which allows sunlight to bounce away.

So how do you trap light in a nearly flat surface? Florent Boudoire, Artur Braun, Edwin Constable, Jakob Heier, and Rita Toth found the answer in moths.



The insects' tiny eyes gather moonlight while limiting reflections that would help predators spot them. By attaching tungsten oxide spheres—in effect, artificial moth eyes—to photoelectrodes, the Swiss team was able to trap light under a nano-thin layer of rust. The advance opens up a new method for hydrogen-fuel production and could let the next generation of solar technologies take wing.



PALMER LUCKEY

FOR BEING THE VANGUARD OF THE NEW VIRTUAL WORLD.

Founder, Oculus VR | Greater Los Angeles

A generation ago, virtual reality (VR) seemed to hold great

promise for commercial use. By the mid-1990s, however, after companies had invested millions of dollars, interest fizzled. Big developers failed to design a cheap headset that immersed the wearer in a convincing 3-D world. Then a home-schooled teenager in Long Beach, California—who passed his time by tinkering with any VR headset he could get his hands on—stepped in. In 2010, Palmer Luckey created his first virtual reality headset, with a 90-degree visual field, nearly twice that of previous devices. The headset that his team has developed in the four years since could sell for between \$200 and \$400, as compared with the \$1,000 to \$50,000 models currently used largely for military and industrial applications.

A 2012 Kickstarter campaign raised \$2.4 million for Luckey's company, Oculus VR, and this March, Facebook made a deal to acquire it for \$2 billion. Although Oculus isn't yet a consumer product, ultimately it may have the potential to place viewers in limitless, gripping scenarios, re-creating the sights and sounds of performing heart surgery, walking the streets of Paris, or engaging in combat.



The Oculus Rift, a virtual reality headset, could be available on the commercial market within months.

THIERRY N'DOUFOU, CHRISTINA WATSON

FOR TAILORING TECHNOLOGY TO AFRICAN CLASSROOMS.

CEO, Siregex; CEO, Via Afrika Publishers | Ivory Coast; South Africa



As education grows ever more entwined with technology, Thierry N'Doufou and Christina Watson are bringing e-learning tools to African classrooms and libraries: N'Doufou by introducing Africa's first educational tablet, and Watson by making electronic learning materials more widely available.

This year, N'Doufou's team is deploying the Qelasy tablet, which he calls a "digital backpack," to pilot programs in Ivory Coast and Morocco. Qelasy can hold a student's entire curriculum and provide a kid-friendly, interactive experience. Watson heads Via Afrika Publishers, a Cape Town-based company that is working to expand schools' access to e-learning materials. In April, her group teamed up with two NGOs, Breadline Africa and the Nelson Mandela Centre of Memory, to launch their first digital centers—libraries built from upcycled materials and equipped with both books and tablets—in rural South Africa. The tablet and centers could reboot African education systems, which retain colonial vestiges: "We continue to go to school here as we went to school 100 years ago," N'Doufou told the BBC. "The same heavy backpack, the same blackboard with the same chalk."



ELIZABETH HOLMES

FOR BEING THE VAMPIRE THAT MODERN MEDICINE NEEDS.

Founder and CEO, Theranos | Palo Alto, Calif.

Elizabeth Holmes wants blood—but not a lot of it. The 30-year-old CEO of Theranos has spent the past 11 years developing cheap, straightforward blood tests for everything from cholesterol to viral infections. The Theranos process uses as little as one-thousandth of the amount of blood normally required for such testing, drawn from a finger prick and sent off immediately for analysis. Results arrive in as few as 24 hours.

Holmes is dead set on changing the way preventive medicine works by providing a quick but comprehensive picture of a patient's health. In the fall of 2013, Theranos penned a deal with Walgreens to collect blood at the chain's pharmacies, with the goal of eventually expanding to all of its roughly 8,200 locations. This was a first step toward Holmes's goal of making personal health information available within five miles of every American at a fraction of what hospitals charge.

Testing, she told *Fortune* this year, could create an "early-detection system" for a range of diseases, and she sees it as a "basic human right."

STEVEN MOLLENKOPF

FOR MAKING SMARTPHONES CLEVER.

CEO, Qualcomm | San Diego

Traditional smartphone chips are computing powerhouses, but they have a hard time recognizing patterns—and learning—like the human mind does. Qualcomm, a semiconductor company headed by Steven Mollenkopf, could be the first to

introduce brain-like chips on a broad commercial scale, as early as next year.

By mimicking the brain's simultaneous processing patterns, Qualcomm's so-called "neuromorphic" chips, currently under development, could bring adaptive learning to devices such as smartphones and navigation systems. A phone could learn to go silent when you go to bed, or to recognize acquaintances in your photos—without programming specialized for those tasks. The result could be devices that are not only smart, but clever.

ARYE KOHAVI

FOR PULLING POTABLE WATER FROM THIN AIR.

Founder and president, Water-Gen | Israel

In Israel, where the Negev Desert covers more than half the country's land area, water is more than just a resource—it's a national security priority. That's why Arye Kohavi developed devices to turn desert air into potable water.

Kohavi's team isn't the first to develop such technology, but its devices, Kohavi says, are more efficient than earlier models. The machine cools incoming air to extract liquid water, and after the water is culled, it passes through a filtration system, yielding potable liquid. The cooling mechanism—usually an energy drain in other machines—is partially self-sustaining by recycling the already cooled air.

Water-Gen has sold devices to seven militaries around the world, including the U.S. armed forces. But the company's machines, one of which produces as many as 120 gallons of water daily, could also have applications for civilian purposes: Some 780 million people lack clean drinking water, and 3.4 million die from water-borne illnesses annually. Water-Gen could help bring those numbers down.



MIKE JANKE, PHIL ZIMMERMANN

FOR PUTTING PRIVACY IN THE PALM OF OUR HAND.

CEO, Silent Circle; president, Silent Circle | National Harbor, Md., Switzerland

Mike Janke and Phil Zimmermann are on a mission to make personal electronic communications truly private. They teamed up—along with the group's Chief Technology Officer Jon Callas—in 2011 to found their company, Silent Circle, which encrypts voice calls, text messages, and attachments through mobile and desktop data services and calling plans. In October 2012, the company released a group of mobile encryption apps that allow users, among other things, to send text messages that quickly evaporate. Within a few months, Silent Circle launched another app that can transfer encrypted files securely between smart devices. Janke and Zimmermann's new calling plan, which launched this summer, broadens the confidentiality that the co-founders consider a basic right.

Silent Circle's technology was used this year by Ukrainian protesters evading their government's surveillance systems. The company is also providing privacy protections for Blackphone, the world's first smartphone optimized for privacy, developed in collaboration with the Spanish start-up Geeksphone. In October, the company announced plans to release their first privacy-focused tablet.



The Advocates

THESE GLOBAL THINKERS HERALD CAUSES OFTEN WRONGLY

considered inconsequential or verboten. They support forgotten victims of sexual violence, protect civilians targeted in internecine violence, count casualties in the fog of war, and demand legal protections for the world's most vulnerable migrants. Often, these men and women—scholars, activists, and religious leaders among them—do this work at their own peril and pay the price, landing in court or prison in some of the world's most repressive countries. For all of them, however, the risk is worth the possible rewards.



HANNA HOPKO

FOR CARRYING UKRAINE'S REVOLUTION BEYOND THE MAIDAN.

Activist | Ukraine

Hanna Hopko was on Kiev's Maidan "from the first day," according to the *New York Times*. A member of the Civic Sector of the Euromaidan, a pro-democracy group, she was a leader among the thousands of protesters who spent the long winter months demanding change in Kiev. Since February, Ukraine's democratic revolution has entered the arguably tougher stage of ensuring meaningful government reform, and Hopko is again on the front lines. She is leading a high-profile lobbying effort to get parliament to pass a package of anti-corruption laws and legal reforms designed by more than 100 experts from a range of sectors. Already, the government has embraced some of the policies; laws on media freedom and public procurement, for instance, passed in April. In October, Hopko was elected to Ukraine's parliament.

Activists claim that legislators have failed to show up for votes and that they focus too much on personal interests. For Hopko, roadblocks are just motivations to keep fighting. "The system is attacking us," Hopko told the *New York Times* this spring, "so we fight back."

RAMI ABDUL RAHMAN, HAGAI EL-AD

FOR DOCUMENTING ATROCITIES AGAINST ALL ODDS.

Director, Syrian Observatory for Human Rights; director, B'Tselem | Britain; Israel

As Syria's civil war dragged into its fourth year, with the death count topping 191,000, Israel and Hamas traded blows for 50 days over the summer, leaving more than 2,100 people dead, the vast majority of them civilians. In the face of such figures, Rami Abdul Rahman and Hagai El-Ad have remained defiantly committed to documenting the atrocities of war.

El-Ad took the helm of Israel's premier human rights organization, B'Tselem, just six weeks before war broke out. Although the assault on Gaza was wildly popular in Israel, he insisted on accountability for harm done to civilians. Abdul Rahman (whose real name is Osama Suleiman) has been at it for longer: Through his Syrian Observatory for Human Rights, Abdul Rahman, who is in exile, has monitored every death and military development in Syria since the war began, becoming a crucial information source for international human rights groups, journalists, and the U.S. Defense Department, among others. And his commitment knows no allegiances: When the United States bombed Syria, Abdul Rahman's group counted those casualties too.

With hatreds apparently deepening in much of the Middle East, Abdul Rahman and El-Ad share an ever-more-urgent, yet increasingly thankless mission.

ZAINAB BANGURA

FOR SHINING A LIGHT ON THE FORGOTTEN VICTIMS OF WARTIME RAPE.

U.N. special representative on sexual violence in conflict | New York City

Men who experience sexual violence in conflict often suffer in silence due to the false idea in many cultures that rape happens only to women. Advocacy and support systems—where they exist at all—are typically designed for women, and victimized men who speak up may even risk prosecution in countries where homosexuality is a crime. As the U.N. special representative on sexual violence in conflict, Zainab Bangura is working to bring attention to this long-overlooked problem. In a March Security Council report, she highlighted sexual violence against men and boys in countries such as Colombia, Afghanistan, and the Democratic Republic of the Congo. The issue has always been there, she told *HuffPost Live* in April, but "we never saw it, because we didn't look for it."

This year, Bangura also decried the Islamic State's selling of women into sexual slavery, threatening perpetrators who harm women and men alike: "There will be no hiding place and no safe haven. Sooner or later, we will get you."

90%

UNICEF estimates that 90 percent of women from the ages of 15 to 49 in Sierra Leone have undergone circumcision. As a teenager, Zainab Bangura almost bled to death during the procedure.



BERNARD KINVI, PATRICK NAINANGUE

FOR DOING GOD'S WORK
AMID HELLISH CONFLICT.

Catholic priests |
Central African Republic

In January, a Christian militia started slaughtering Muslim civilians and torching their homes in Bossempte, a small town in the interior of the Central African Republic. The attacks were reprisals for crimes committed over several months by Muslim rebels, whose leadership had seized control of Bangui, the capital, in March 2013. As Christian fighters hunted Muslims, Father Bernard Kinvi and Father Patrick Nainangue searched for survivors to protect, while also retrieving and burying the dead. In all, more than 1,000 people found shelter in their church's compound.

Although the African Union, France, and, most recently, the U.N. have committed peacekeepers to quell attacks, more than 5,000 people have been killed in the Central African Republic since December 2013. Kinvi and Nainangue helped most of Bossempte's Muslims flee to neighboring countries, and they continue to shelter those few who remain.

LENA KLIMOVA, YEVGENY VITISHKO

FOR TRAINING THE OLYMPIC
SPOTLIGHT ON RUSSIAN DISSENT.

Activists | Russia

With the world's eyes on Sochi, Russia, Lena Klimova and Yevgeny Vitishko helped expose the oppressive forces behind the pageantry of the 2014 Winter Olympics.

Just prior to the games, the Kremlin undertook a severe crackdown on activists in Sochi and around the country,

detaining dozens of dissenters for minor or trumped-up offenses. LGBT rights activist Klimova, the creator of Children 404, a web support group for gay teens, was charged with promoting gay propaganda to minors. Klimova's case was ultimately dismissed, but Vitishko, whose advocacy dealt more specifically with the Olympics, is still serving time. In February, five days into the games, a court upheld an earlier decision to imprison the environmental activist for three years. Rights groups contend that his detention is politically motivated: He had previously documented the dire environmental impact of the games. Yulia Gorbunova of Human Rights Watch said in a February statement that it was clear authorities "were trying to silence and exact retribution against certain persistent critics of the preparations for the Olympics."

Klimova and Vitishko's treatment at the hands of the Russian authorities was a reminder that, beneath their symbolism of international peace and unity, the 2014 Olympics had a dark underbelly.



IRIS YASSMÍN BARRIOS AGUILAR

FOR RELENTLESSLY
PURSUING JUSTICE.

Judge | Guatemala

No national tribunal had ever brought genocide charges against its own former head of state until Judge Iris Yassmín Barrios Aguilar tried Gen. Efraín Ríos Montt, the former Guatemalan dictator, for

ILHAM TOHTI

FOR BEING THE CONSCIENCE OF THE
UIGHUR PEOPLE.

Economist, activist | China

Over the past two years, clashes between citizens and police have reportedly killed hundreds in China's Xinjiang region, a part of the country that has witnessed sporadic interethnic violence for decades. The Chinese government maintains that Xinjiang's Uighur population, a Muslim minority, is to blame: The perpetrators are terrorists and secessionists seeking to undermine the state. But economics professor Ilham Tohti, who founded the news website *Uighur Online* in 2006, tells a very different story—one in which police brutality, rising unemployment, and repressive policies are worsening life in Xinjiang. "Every time something happens, the government responds with one word: pressure," he told the Associated Press in 2013.

For speaking so candidly, Tohti was arrested in January on the spurious charge of separatism; this fall, he was sentenced to life in prison. The silencing of such a moderate voice marks a troubling setback in the debate over Uighur rights. As prominent Chinese human rights lawyer Teng Biao wrote in the *Guardian* after the verdict, "Tohti is the conscience of the Uighur people."



presiding over the mass killing of the Maya Ixil minority. The Ixil were among Ríos Montt's key targets during his time in power amid Guatemala's 36-year civil war; the country's army carried out a brutal scorched-earth campaign against leftist rebels, burning villages, carrying out massacres, and raping women and girls.

In May 2013, Barrios sentenced Ríos Montt to 80 years in prison, vindicating his victims' long search for justice. Shortly after the ruling, allies of the old regime struck back against Barrios and her colleagues. That same month, the Constitutional Court invalidated the sentence and scheduled a new trial for early 2015. In April of this year, Guatemala's bar association suspended Barrios from practicing law for a year in a move that Barrios and her supporters consider politically motivated. But Barrios is standing her ground. "I am a lawyer," she told the digital publication *El Faro* in August. "I believe in justice. So it's easy. There isn't much confusion."

BIRAM DAH ABEID

FOR CHAMPIONING ABOLITION IN A SLAVERY STRONGHOLD.

Abolitionist | Mauritania

More than three decades after Mauritania became the last country to abolish slavery, the practice remains endemic there. With some 150,000 people enslaved in a population of some 3.8 million, the Muslim-majority country has the world's highest incidence of slavery.

Some of the country's abolitionists favor dialogue with the government, but not Biram Dah Abeid. Mauritania's most prominent anti-slavery activist has staged hunger strikes, burned Islamic texts that he contends legitimize the practice, and even fought a policeman who failed to arrest a slaveholder. As a fellow abolitionist recently told the *New Yorker*, Abeid and his Initiative for the Resurgence of the Abolitionist Movement "have

provided a new way of fighting the situation."

It might be paying off. This March, Mauritania's government adopted a U.N. plan to end slavery once and for all, having last year set up an agency to address the crisis. Yet Abeid remains only cautiously optimistic. "Sometimes I feel doubt," he told the *New Yorker*. "But it reassures me when I see people resist."

WENDY YOUNG

FOR GIVING YOUNG MIGRANTS THEIR DAY IN COURT.

President, *Kids in Need of Defense* | Washington, D.C.

Attention to unaccompanied minors crossing into the United States surged this year. But out of the spotlight, Wendy Young and her organization, Kids in Need of Defense (KIND), have been working with these children since 2008.

The group pairs pro bono lawyers with migrant minors from Latin America who would otherwise lack the means to defend themselves in court. With legal representation, the migrants are several times more likely to be permitted to stay in the country. KIND's efforts became all the more significant this summer, when, by July 2014, more than 57,000 unaccompanied minors had already poured into the United States, partly due to gang- and drug-related violence. That's double the previous year's total.

KIND has trained a network of more than 5,000 lawyers—many of them accustomed to working with corporate clients and unfamiliar with immigration law—to navigate the complexities of the children's cases. "Just as I would hope that one of our kids would be treated well if they found themselves on the other side of a border," Young told *Media Matters* in June, "I think most Americans can find it in their heart, and do find it in their heart, to exercise compassion and care for these young children."



GLORIA AMPARO, MARITZA ASPRILLA CRUZ, MERY MEDINA

FOR SPREADING THEIR WINGS TO PROTECT AND EMPOWER WOMEN.

Activists | Colombia

As armed gangs vie for power in the latest manifestation of Colombia's decades-long civil conflict, they continue to torture, rape, and kill women to show their strength. Since 2010, a group of brave volunteers known as the "Butterflies" has been working to repair the damage.

With more than 100 women, the network spans the Afro-Colombian community of Buenaventura, a coastal city with the highest rate of violence in the country. The volunteers, many of whom once suffered abuse, shelter victims in their homes, educate them about their rights, find them medical and psychological care, and help them report crimes to authorities. Despite receiving threats from gangs, the group has managed to help more than 1,000 women and families.

In September, Gloria Amparo, Maritza Asprilla Cruz, and Mery Medina accepted an annual prize from the Office of the U.N. High Commissioner for Refugees on behalf of the Butterflies. "These women are doing extraordinary work in the most challenging of contexts," High Commissioner Antonio Guterres said. "Their bravery goes beyond words."

XIAO MEILI

FOR BRINGING GENDER-BASED VIOLENCE OUT OF THE CLOSET.

Feminist | China

Talking about gender-based violence may be taboo in Chinese society, but it's one taboo that Xiao Meili has walked all over—literally. From September 2013 to March 2014, the activist trekked from Beijing to Guangzhou, or more than 1,300 miles, to galvanize people's support and petition local governments, educational institutions, and police bureaus to reform gender-based violence policies and disclose related statistics. Nearly a fourth of married women in China are victims of domestic violence,

according to the All-China Women's Federation, but many of these incidents remain unreported. It is a problem that law enforcement often refuses to address.

"Everyone assumes that some things can't be changed," Xiao told a Chinese publication, "like that women are born into suffering." Fighting that assumption, she works with local feminist groups and helps to organize demonstrations; on Valentine's Day in 2012, she and two others donned blood-spattered wedding dresses to protest domestic violence. Over the following year, university students protested in major cities, garnering widespread attention and making "bloody wedding dress" a well-known Internet meme in China.





The Chroniclers

A GOOD STORY ALMOST ALWAYS INVOLVES AN INTRIGUING PLOT AND

skillfully drawn characters, but the way a tale is delivered can make it truly exceptional. These Global Thinkers are masters of storytelling forms, whether they are live-tweeting the events of war, empowering marginalized populations to report news through something as simple as a phone call, explaining the nature of the universe in the 1,000 most common words in the English language, or weaving humor into televised coverage of the world's most pressing issues. They are modern-day raconteurs, telling people what they need to know—and often using groundbreaking platforms to do it.

Q+A: HAJOOJ KUKA

FILMMAKER, SUDAN

Interview by Jake Scobey-Thal

The creation of South Sudan was the result of a failure to create a Sudanese identity that encompasses everybody. If you just go to Khartoum, the capital of Sudan, and then go to Juba, the capital of South Sudan, you will get the idea that these people aren't connected. But if you take the route, starting from Khartoum and going slowly south to Juba, you realize that these communities, ethnically and culturally, change gradually. There is actually a very strong collective identity between Sudan and South Sudan.

Most of the time, life is normal. And then the Antonovs—the Russian-made airplanes that the government employs to bomb the Nuba Mountains and Blue Nile region—come and shell the area. But that only happens from time to time. When you are living there, you can almost forget that the country is at war. You get into your daily life, but then, suddenly, it's disrupted. I wanted the audience to feel that in the film: to feel comfortable and then, out of nowhere, be disrupted. That's how life is there.

The only way forward is for the Khartoum regime to give up power. That leaves four ways for change.

First, the government can peacefully hand over power to a transitional government that calls for a national dialogue. Second, a mass protest topples the government. Third, an internal within-ruling-party or an army coup takes place. Fourth, a rebel group manages to overpower the government and take power. The last three options are better left to the Sudanese people to accomplish. The first option can be achieved if enough pressure is placed on the already weak Sudanese government. This is a peaceful road to achieving democracy in Sudan and should be the official stand of Western governments.

JEMAL COUNTESS/GETTY IMAGES

SHUBHRANSU CHAUDHARY

FOR GIVING RURAL INDIANS A MEGAPHONE.

Founder, CGNet Swara | India

In the early 2000s, while covering a decades-long Maoist insurgency in Chhattisgarh state, BBC producer Shubhranshu Choudhary realized that local residents lacked the technology and literacy skills to share news and information with each other, and with the outside world. "It wasn't communism they wanted but to have a voice, to be heard and taken seriously," he told *National Geographic*.

So he left his job and, in 2010, launched the mobile news service CGNet Swara in a country with 23 official languages—and where less than 7 percent of people have access to computers, but 70 percent have cell phones. Covering everything from local corruption to national elections, Swara's stories have been picked up by major international media. In fact, one account of police violence led to a U.N. report and prompted the Indian Supreme Court to demand an investigation.

In March, Choudhary beat out leaker Edward Snowden for the Google Digital Activism Award. "Journalism," he said when receiving the award, "needs to become everybody's business."

literature's power comes from recesses deeper and more personal than the gloss of fame.

Ferrante's latest novel, *Those Who Leave and Those Who Stay*, is the third in a series tracing a bond between two women who, like the author, grew up in Naples, Italy. It's a raw study of the distance brought by diverging circumstances of education and family. "Is there a way of safeguarding the right of an author to choose to establish, once and for all, through his writing alone, what of himself should become public?" Ferrante asked in 1995. If there is, perhaps this is it.



HAJOOJ KUKA

FOR DOCUMENTING SUDAN'S IDENTITY CRISIS.

Filmmaker | Sudan

For the displaced in the Blue Nile and Nuba Mountain regions of Sudan—victims of a conflict between the government and various rebel groups—life vacillates between feeling calm and feeling hellish. This is the reality that filmmaker Hajooj Kuka captures in his award-winning 2014 film *Beats of the Antonov*. Departing from traditional documentary reporting about conflict, Kuka tells the story of Sudan's internally displaced people through a series of nonlinear vignettes in camps, interspersing footage of government shelling with scenes of music-making and dance.

While the movie is meant to shine a light on the underreported violence, it is fundamentally about what it means to be Sudanese. The government, dominated by Sudanese Arabs, pushes a monolithic brand of national culture in a country with dozens of distinct ethnicities. Sudan, Kuka seems to be saying, is not just at war—it is facing an identity crisis.

ELENA FERRANTE

FOR WRITING HONEST, ANONYMOUS FICTION.

Novelist | Unknown

There are no known photographs of Italian novelist Elena Ferrante. She or he—the name is a pseudonym—has never appeared in public, at least not as such. But when Ferrante says, as the author did via email in an August interview with *Vogue*, that "in fiction it's possible to sweep away all the veils," it's convincing. Ferrante's intimate portraits of friendship and family show that



CRISTINA DE MIDDLE

FOR CREATING MAGIC TO CAPTURE TRUTH.

Photographer | United Kingdom

Once a photojournalist, Cristina De Middel is now winning plaudits for her work in another storytelling medium: photographic fiction. By fusing documentary photography with her own casting, props, and scenic design, De Middel captures the essence of complex narratives. For her 2012 award-winning series, *The Afronauts*, based on the true story of Zambia's short-lived space program, De Middel transmuted vivid, patterned fabric into spacesuits and oil drums into spaceships. "I wanted that B-movie effect, where normal things can be turned into magical things," she told the *Guardian*.

This year, De Middel completed *This Is What Hatred Did*, a retelling of the 1954 novel *My Life in the Bush of Ghosts*, by Amos Tutuola, in which a Nigerian boy flees violence and spends 30 years in the bush among Yoruba spirits. De Middel chose Makoko, a Lagos slum, as her visual metaphor for that mythical landscape. "I'm finally understanding the stories I'm documenting," she told *Time*. "My ideas are much more truthful than when I was a photojournalist."

ROBERTO TROTTA

FOR JUNKING ASTRONOMY'S JARGON.

Theoretical cosmologist | United Kingdom

The origins and destiny of the universe are hard to explain. In *The Edge of the Sky: All You Need to Know About the All-There-Is*, published in

Among the words not included in Roberto Trotta's book about the universe are physics, astronomy, cosmology, science, scientist, planet, energy, hydrogen, particle, galaxy, gravity, orbit, cosmos, Earth, moon, Mars, mystery, history—and, yes, universe.

MICHAEL LEWIS

FOR WRITING WALL STREET INTO A CORNER.

Writer | Berkeley, Calif.

Within a month of Michael Lewis's best-selling *Flash Boys: A Wall Street Revolt* appearing in bookstores this spring, six governmental bodies announced investigations into the book's subject: high-frequency trading in financial markets. Such success was yet another reminder of Lewis's rare ability to pinpoint and illuminate the complex practices that define current finance.

High-frequency traders buy and sell huge volumes of shares in split-second transactions. Lewis's most recent book argues that the practice—which in 2012 accounted for more than half the volume of shares traded in American stocks—enriches firms that contribute little to the broader economy and, in the process, leaves other investors behind. The open market, Lewis writes, "had become, in spirit, something like a private viewing of a stolen work of art." *Flash Boys* is a clear-eyed look through the keyhole.

BINYAVANGA WAINAINA

FOR REVEALING A SECRET TO ADVANCE LGBT RIGHTS IN AFRICA.

Author | Kenya

This past January, acclaimed Kenyan author Binyavanga Wainaina came out in an online essay titled "I Am a Homosexual, Mum." In what he calls a "lost chapter" of his 2011 memoir, *One Day I Will Write About This Place*, Wainaina describes missing the chance to share his sexuality with his mother before she died. The essay was a controversial sensation—a "gay bombshell," according to Nairobi's *Daily Nation*—as Wainaina joined a very small group of prominent, openly gay African figures.

The timing of the publication was no accident. It was intended as pushback against violations of lesbian, gay, bisexual, and transgender (LGBT) rights across sub-Saharan Africa. Uganda's Parliament had recently passed its infamous Anti-Homosexuality Act, and Nigeria had just criminalized same-sex relationships. "I want to be part of a generation of people ... who change [Africa] to be accountable to itself," Wainaina told *GlobalPost*. Such change will take time, but as Ugandan lesbian activist Val Kalende wrote in April, Wainaina's "story could be the beginning of what is still a long walk to the acceptance of LGBT people on the continent."



September, cosmologist Roberto Trotta takes on the task with only the 1,000 most common English words.

As Trotta follows a fictional female scientist ("student-woman") through a night of astronomical exploration at an observatory telescope (a "Big-Seer"), the greatest problems in cosmology—dark matter and energy, the Big Bang, the curvature of space—are presented in accessible and sometimes poetic language: "[L]ike Mr. Hubble found long ago," Trotta writes, explaining the expansion of the universe and the movement of galaxies, "the Star-Crowds are running away from each other, as the space between them gets bigger and bigger. The All-There-Is is growing with time."

The universe is mysterious enough as it is. Explorers, Trotta believes, shouldn't have to get lost in jargon.

MARYAM MIRZAKHANI

FOR EXPLORING MATHEMATICAL SPACE.

Mathematician | Palo Alto, Calif.

By the time she completed her doctorate at age 27, Maryam Mirzakhani's contributions to pure mathematics had earned her the praise of scholars around the world. Among other subjects, Mirzakhani studies abstract surfaces, shapes that exist outside three-dimensional space. Try measuring multi-holed doughnuts on which straight lines can loop back on themselves (but sometimes don't) or tracking the movement of a theoretical billiard ball through spaces with limitless configurations of edges. The Iranian-born Stanford University professor has done both and this year was awarded the Fields Medal, viewed by many as the

highest honor in mathematics.

Although highly abstract, her work could influence the direction of other areas in pure mathematics and theoretical physics. Mirzakhani's office is scattered with sketches of the shapes she studies. "Of course, the most rewarding part is the 'aha' moment," she told the *Guardian*. "But most of the time, doing mathematics for me is like being on a long hike with no trail and no end in sight."

JOHN OLIVER

FOR INVENTING INVESTIGATIVE COMEDY.

Television host | New York City

Since April, *Last Week Tonight With John Oliver* has been rebranding the journalistic satire that Jon Stewart and Stephen Colbert have long dominated. John Oliver uses his comedic gifts and his team's rigorous reporting to put interview subjects in a pitiless hot seat. His 30-minute, Sunday night slot premiered with the comedian asking former National Security Agency Director Keith Alexander why Americans should trust the agency when Oliver himself would abuse its power if given the chance.

The investigative nature of the program is indisputable. By staffing up with pros to dig through tax records and track down experts, Oliver's segments blur the line between satire and reporting. His targets have taken note. After he disparaged Thailand's strict restrictions on critiques of its royal family, the country's military government identified Oliver as a threat who is "undermining the royal institution," according to a document obtained by *Vice News*. Still, Oliver insists his show isn't journalism: "It's comedy—it's comedy first, and it's comedy second."



JENNIFER EBERHARDT

FOR QUANTIFYING RACIAL PREJUDICE.

Social psychologist | Palo Alto, Calif.

Jennifer Eberhardt's research may not seem so pioneering at first. Its premise, that many Americans prejudicially associate African-Americans with crime, was part of the country's sociopolitical conversation long before the shooting of Michael Brown in Ferguson, Missouri, this summer. By bringing experimental evidence to bear on the issue, however, Eberhardt's work breaks new ground by showing just how deeply entrenched racial biases are.

Over the past few years, Eberhardt, a psychology professor at Stanford University, has found that juries are more likely to find defendants guilty simply if they look "stereotypically black"—based on skin color and hair texture—and to give them harsher sentences. She also has shown that test subjects are more likely to associate images related to crime, such as guns, with black faces than with white ones, even if those subjects see the faces for mere milliseconds. With this in-depth understanding of racial bias, Eberhardt, awarded a MacArthur "genius" grant in September, has begun advising police departments about how best to avoid harmful, subconscious perceptions.

As a child, Maryam Mirzakhani dreamed of one day becoming a fiction writer.



MAXIMIZING MINIMALISM

ILLUSTRATION BY JOHN POBOJEWSKI / THIRST

Call it an exercise in creative restraint: In his 2014 book, *The Edge of the Sky: All You Need to Know About the All-There-Is*, theoretical cosmologist and Global Thinker Roberto Trotta describes the origins and future of the universe using only the 1,000 most common words in the English language. This grand, brilliant project naturally sparks the question: Which words did Trotta himself use most often?

The spiral graphic to the right represents the answer. All the words in the book were analyzed, excluding the most common conjunctions, prepositions, pronouns, and articles (for example, "or," "out," "she," and "the") and formal names. Then, 500 of the words were plotted out such that their relative heights—lowest on the outside of the spiral, highest in the center—correspond to their frequency on Trotta's pages. As the graphic shows, among the most used words was a bit of serendipitous, if poignant, found poetry: the words "all" "there" "was." Coincidentally, if phrased together, this is what the universe, in Trotta's terms, would be called if it ceased to exist.



A dense, abstract word cloud composed of various English words, with 'WAS' being the most prominent central word. The words are rendered in a variety of sizes and colors, including shades of blue, green, and yellow, and are set against a dark, textured background.



PADMINI PRAKASH

FOR BRINGING THIRD GENDER TO PRIME TIME.

News anchor | India

When Padmini Prakash read the news for Lotus News's 7 p.m. broadcast on Aug. 15, she became India's first transgender TV anchor. The anniversary of India's independence, the day was fitting for a step away from a history of discrimination.

In precolonial India, some *hijras*—a term that describes transgender and intersex people as well as eunuchs—held prominent positions in society. But British colonial law criminalized them and pushed them to the margins, where they have largely remained. Prakash's family disowned her when she was 13, and she attempted suicide before becoming an activist for the transgender community.

Lesbian, gay, bisexual, and transgender (LGBT) rights inched forward in April, when India's Supreme Court recognized the right to identify as a third gender, neither male nor female. Many of India's estimated 2 million transgender people identify as such, though others choose to be male or female. In a country where gay sex remains illegal, Prakash's Tamil-language broadcasts, which viewers highly praise, are an important advance for the LGBT cause.

SIÂN EVANS, DOROTHY HOWARD, RICHARD KNIPEL, JACQUELINE MABEY, MICHAEL MANDIBERG, LAUREL PTAK

FOR CORRECTING THE WIKIPEDIA GENDER GAP.

Artists, curators, Wikipedia editors | New York City

Wikipedia is increasingly the first resort for those seeking information in a hurry. But as of 2013, only 13 percent of Wikipedia's contributors were female, according to the site's co-founder, Jimmy Wales.

A group that calls itself "ArtAndFeminism" cites that

statistic as motivation for an "edit-a-thon" in which, over the course of one Saturday in February, around 600 people attempted to correct some of the site's male bias. "Attendees are encouraged to edit any entry of interest related to art, feminism, gender studies, and LGBTQ issues," the organizers wrote on the Facebook page for the event. The effort spanned some 30 cities—from New York to Amsterdam to Adelaide—and its participants created about 100 new articles and modified at least 90.

Since the inaugural gathering, many more editing meet-ups have followed. And in October, ArtAndFeminism held the first of a series of workshops, called "Train the Trainers," to prepare aspiring activist-editors for future projects. "The tools of change are in your hands," the organizers wrote on their own Wikipedia page.

FARAH BAKER

FOR CATALOGING OPERATION PROTECTIVE EDGE IN 140 CHARACTERS.

Live-tweeter | Gaza Strip

Over the course of this year's 50-day war between Hamas and Israel, Farah Baker—better known as @Farah_Gazan—extended her global reach from 800 Twitter followers to more than 200,000. "I don't want [people] to think that I just want to be famous," the 16-year-old told Sky News. "I see that this is the only way I can help Gaza."

Baker's tweets landed at a rapid-fire pace, like the Israeli bombs that pounded her neighborhood. On July 28, she wrote: "They are bombing heavily in my area. This is the worst night in this war. I just want you to know that I might martyr at any moment #Gaza." Her words, combined with powerful photos, helped place her followers on the scene during the war, which left more than 2,100 Palestinians dead, the majority of them civilians.

"I'm the modern Anne Frank," her Twitter bio read this summer.





The Healers

THE EBOLA EPIDEMIC, WHICH HAD CAUSED NEARLY 5,000 DEATHS BY early November, has cruelly underscored the fragility of human life—and the tenuousness of global, national, and local health systems. Whether dealing with Ebola or other crises, these doctors, nurses, researchers, and inventors are working to protect both lives and systems from breaking. From advocating for effective, affordable hepatitis C treatment, to spearheading the campaign that eradicated polio from India, to developing a new method of detecting malaria, to challenging the way clinicians and cultures describe schizophrenia, they are helping provide the world with tools that can inject much-needed strength and hope into global health.



JOSEPHINE FINDA SELLU

FOR DEFYING DEATH IN
THE HOT ZONE.

Nurse | Sierra Leone

Health workers in West Africa have been hit hard by Ebola. Lacking sufficient protective gear and other resources in the face of an unprecedented crisis, some 240 had become infected and more than 120 had died by Aug. 25, according to the World Health Organization. Those numbers have only risen since, and many health workers have fearfully fled their jobs.

But many have stood their ground. For deputy nurse matron Josephine Finda Sellu, working in the Ebola wing of a government hospital in the Sierra Leonean

city of Kenema was all but a death sentence. By late August, 15 nurses had died, reportedly comprising around half the health workers killed in Sierra Leone at the time. But Sellu, called "Mummy" by her staff, refused to abandon her post despite pleas from her family and the biting social stigma heaped on many health workers who have remained on Ebola's front lines.

"There is a need for me to be around," she told the *New York Times*. "I am a senior. All the junior nurses look up to me."

KEVIN WHALEY, LARRY ZEITLIN

FOR INVENTING A POSSIBLE CURE
FOR A RAGING EPIDEMIC.

Scientists | San Diego

As Ebola began tearing through West Africa early this year, no drug existed to stop it. Then, in August, an experimental serum of antibodies that had never even been tested on humans was given to two American missionaries infected with the disease—and they survived. Almost overnight, ZMapp, made by Kevin Whaley and Larry Zeitlin's San Diego-based Mapp Biopharmaceutical, became a household name.

The U.S. Department of Health and Human Services quickly allotted \$24.9 million to Mapp to fast-track development and testing over 18 months. The sudden interest in the small company, Zeitlin told the *New York Times*, has been "absolutely overwhelming."

The drug's safety and effectiveness are not yet fully understood, and there are serious ethical questions about who should get the drug and how to do human trials. But in late August, lab tests showed that ZMapp cured monkeys infected with Ebola, suggesting the serum might be a real game-changer. "Once you have a drug it could have a huge impact," Whaley told the *San Diego Union-Tribune*, "for individuals or for large populations."

KATHRYN HUNT

FOR UNEARTHING CANCER'S
ANCIENT SECRETS.

Paleopathologist | United Kingdom

Being diagnosed with cancer at age 22 might stop a lot of people from digging in the desert for ancient bones. Not Kathryn Hunt: Just two months after her chemotherapy ended, the budding archeologist spent part of her senior year of university on a dig in Egypt. She then went on to get a degree in paleopathology—the study of ancient diseases—at Durham University, and in 2012, she co-founded the Paleo-oncology Research Organization. So far she has documented 230 cases of ancient cancer.

In April, she and her colleagues brought together 10 researchers to work on an interactive, open-source database, and Hunt was rewarded for her work with a TED fellowship. She says she hopes this expanding field of archeological inquiry will add to contemporary understandings of cancer, proving that it isn't only caused by modern pesticides or pollution. A 2010 paper claimed that only a handful of cancer cases had been found in Egyptian mummies, but Hunt says the paper lacked data. And data are exactly what she's looking for.



SELLU: COURTESY PHOTO; HUNT: COURTESY PHOTO



TANYA LUHRMANN

FOR LINKING CULTURE AND SCHIZOPHRENIA.

Anthropologist | Stanford, Calif.

According to modern medicine, the voices that people with schizophrenia hear are symptoms of a disease that can be tackled with medication and other therapies. But Stanford University anthropologist Tanya Luhrmann takes a different approach: She wants to know what voices are saying—and why.

In June, Luhrmann co-authored a study in the *British Journal of Psychiatry* that was based on interviews with people with schizophrenia in the United States, India, and Ghana. She found that while American patients perceived their voices as violent, intrusive signs of disease, people in India and Ghana tended to have more positive, personal relationships with them: They even heard the voices of family members or God.

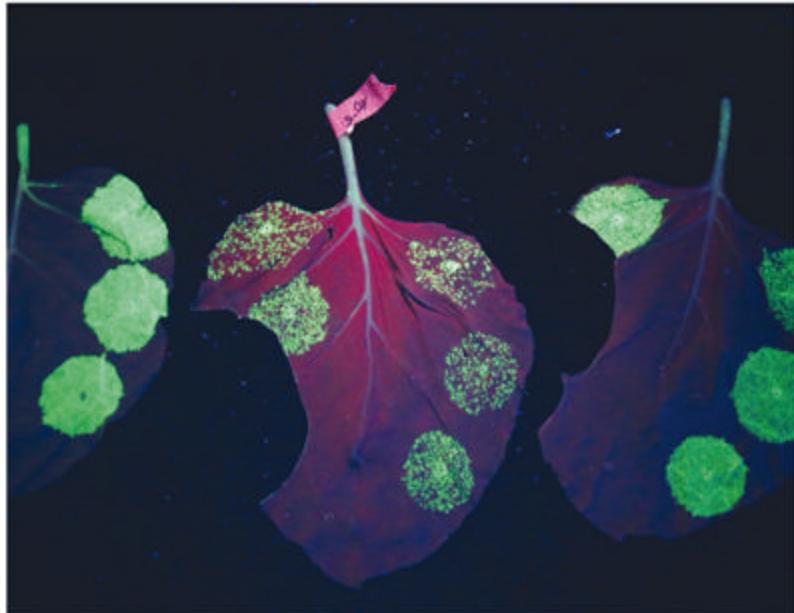
The study suggests that culture affects how people experience psychosis, a finding that could lead to a new tailoring of treatment. In the United States, for instance, patients could be encouraged to interact with their voices, instead of fearing them. As Luhrmann told the *Huffington Post*, this would be a “radical way of thinking” about voices—one that could reap enormous clinical benefits.

GORDANA VUNJAK-NOVAKOVIC

FOR CRACKING THE CARTILAGE CONUNDRUM.

Biomedical engineer | New York City

For over two decades, a major challenge for medical engineers



ZMapp was originally produced in hydroponic tobacco plants, which were then ground up to produce the serum. This year, the Gates Foundation gave Mapp Biopharmaceutical a \$150,000 grant to explore whether the drug could be made in Chinese hamster cells—a proven process for other drugs that could yield larger quantities of the treatment.

has been reproducing functional human cartilage. The crucial tissue doesn't regenerate on its own, and replacements made from animal cells aren't strong enough. Then came Gordana Vunjak-Novakovic and her team of researchers at Columbia University's Laboratory for Stem Cells and Tissue Engineering. After years of working to create replacement cartilage, they announced in April that they successfully used a 3-D printer to produce the tissue. How? By using “ink” made from human stem cells.

Don't expect to find this new cartilage in your knees or elbows anytime soon. Clinical use is still a ways off. “We are not ready to go into patients,” Vunjak-Novakovic has said. But human application is the goal. “We live longer and we would like to live better,” she said in a talk at Columbia University's engineering school. “And if this is going to happen, then we really need spare parts to maintain our bodies.”



DEEPAK KAPUR

FOR CRUSHING FEAR TO DEFEAT POLIO IN INDIA.

Chairman, India National PolioPlus Committee | India

Deepak Kapur knows precisely when the World Health Organization officially declared India polio-free: 2:31 p.m. on

March 27, 2014. He checked his watch to know “exactly when history was made,” he told the *Wall Street Journal*.

India was a perfect home for the poliovirus: It has a huge population, poor sanitation, impure drinking water, and malnutrition. As recently as 2009, the country was home to around half of the world's cases of polio. (Worldwide, the disease has infected more than 250 people in 2014 to date, mostly in Pakistan.) Complicating matters, the campaign to vaccinate millions of children faced resistance among India's Muslims.

Kapur's Rotary Foundation-run committee was instrumental in convincing Muslim leaders of the virtues of vaccination, and he sees their about-face as a key ingredient in polio's eradication, alongside the use of a vaccine that targets two strains of the disease at once.

The success carries lessons for other countries where polio remains as endemic as suspicions about vaccination.

JOHN ROTHER, MICHAEL SOFIA

FOR DELIVERING A LIFESAVING DRUG AND TAKING ON BIG PHARMA.

President and CEO, National Coalition on Health Care; co-founder, OnCore Biopharma | Washington, D.C.; Doylestown, Penn.

How can you make an organ accept and retain a drug that normally won't enter it? That's one of the chief problems biotechnologist Michael Sofia faced while working on a way to defeat hepatitis C, the liver disease that affects between 130 million and 150 million chronic sufferers worldwide.

The Baltimore native developed a crafty solution: drape the drug in what the *New Yorker* called an "invisibility cloak" to disguise its entry into the liver. Enzymes in the organ would then break down the cloak, allowing the drug to fight the disease without harming the rest of the body's cells. Marketed by the pharmaceutical company Gilead as Sovaldi, the drug, taken in combination with other therapies, can cure more than 80 percent of patients undergoing as little as 12 weeks of treatment.

But a full round of treatment can cost \$84,000. So in July, John Rother, a longtime advocate of affordable pharmaceuticals, sent an open letter to Gilead, urging the company, which made \$3.48 billion in Sovaldi sales in the second quarter of 2014, to lower prices. "This is a necessary drug for people who are sick, yet we're allowing the price to impose an incredible barrier to access," Rother said on a panel in July. Although Gilead has yet to drop the cost, in September the company did license the drug to seven Indian firms that will sell cheaper generic versions in some 90 developing countries.

Each year, between 350,000 and 500,000 people around the world die from liver diseases related to hepatitis C.

WENG KUNG PENG, BRIAN GRIMBERG, JOHN LEWANDOWSKI

FOR USING MAGNETS TO BEAT MALARIA.

Scientist; biologist; Ph.D. student | Singapore; Cleveland; Boston

Although Ebola has dominated headlines this year, it is still malaria—avoidable malaria—that remains one of Africa's biggest killers. An estimated 207 million people worldwide were infected with the disease in 2012, according to the World Health Organization. Of those, 627,000 died—and 90 percent of the deaths occurred in Africa.

Public health advocates have long sought ways to diagnose the disease that don't involve labor-intensive lab testing and are cheap, easy, portable—and, most importantly, reliable. The answer? It could be magnets.

Researchers have long known that the malaria parasite feeds on iron-rich hemoglobin. So for the past few years, the race has been on to design a magnetic device that, to put it simply, can detect the "iron-laden poop that malaria parasites leave behind," as one reporter wrote in Cleveland's *Plain Dealer*. Each with their own prototype device in hand, Weng Kung Peng and John Lewandowski, who refined his technology from an original concept developed by Brian Grimberg, are now eyeing the finish line.

Requiring only a drop of blood, both devices, which are technologically different, can generate diagnoses within a matter of minutes. Not only can both detect the disease before symptoms show, but their results could be far more reliable than today's testing methods. The technologies are currently under development, but could save thousands from one of the world's biggest killers.



SANGEETA BHATIA

FOR CREATING A KINDER ALTERNATIVE TO THE COLONOSCOPY.

Engineer and physician | Cambridge, Mass.

In the vast majority of cases, colon cancer doesn't have to be fatal. If detected early enough, the five-year survival rate is 90 percent. But only 40 percent of those afflicted are diagnosed early, in part because screening requires expensive and invasive tests such as colonoscopies. But with Sangeeta Bhatia's invention, that could all change.

This year, Bhatia and her team at the Massachusetts Institute of Technology have been working on a technique for a simple, cheap diagnostic that could make colon cancer screenings nearly as easy as a pregnancy test. Patients would be injected with special nanoparticles. In a positive test, enzymes produced by tumors would break down these particles, which would then be detected in a simple urine sample. Now, Bhatia and her team are working on a method to deliver the nanoparticles with a spoonful of yogurt, which could make testing even simpler.

The technique is still in the early testing phases, but preliminary experiments in which nanoparticles are injected into mice seem to have shown promise. If successful, the procedure could be particularly important in the developing world, where the test could be performed in rural settings, without specialized equipment.



The Artists

"ART IS A LIE THAT MAKES US REALIZE TRUTH," PABLO PICASSO ONCE said. It is an idea epitomized by these Global Thinkers—painters, sculptors, architects, and filmmakers. From searing images of children doing everyday things against the backdrop of the Syrian war, to a massive sphinx made of sugar that forces an intellectual confrontation with racism in America, to a satirical installation that questions the ethics and efficacy of Western aid to Africa, the works created by these artists demand that viewers reconsider what they know to be true.



KARA WALKER

FOR SCULPTING A SWEET MONUMENT TO AMERICA'S BITTER HISTORY.

Artist | New York City

Since her career took off in the early 1990s, Kara Walker has been using art to discuss America's troubling history of racial and sexual violence. But her exhibit on display this summer, *A Subtlety, or the Marvelous Sugar Baby*, brought her treatment of these issues to monumental proportions. In a massive, derelict sugar-processing factory in Brooklyn stood a 75.5-foot-long, 35.5-foot-tall sculpture of a nude, sphinx-like woman resembling a caricature of a house slave, coated in white sugar.

A Subtlety garnered critical acclaim, furthering a long run of subversive achievements for which Walker is justly celebrated. More important still, it forced a public conversation about America's legacy of white supremacy, sexual exploitation, and capitalism.

MAYMANAH FARHAT, MOHANNAD ORABI

FOR PAINTING THE SYRIAN TRAGEDY.

Curator; artist | New York City; United Arab Emirates

"Syria's Apex Generation," an art exhibit that appeared in Beirut, Dubai, and London this year, features painters whose work exposes their country's agony in a way no newspaper headline ever could. The exhibit is curated by Maymanah Farhat of the Ayyam Gallery, and its finest pieces are the haunting paintings of Mohannad Orabi, who brings to life the war's devastating effects on children. His characters often have the rounded faces of infants: streaked over with paint, their huge, dark eyes seem at once curious, innocent, and afraid. In one painting, a child potty-trains as a battle scene unfolds behind him.

The exhibit reminds the world of what is at stake in Syria: both human lives and a rich, unique culture. "I can't stop the war myself," Orabi told Abu Dhabi's *National* newspaper in August. "But maybe if I can help people outside Syria think about it, then maybe one day it will stop."

JASON DECAIRES TAYLOR

FOR BECOMING THE JACQUES COUSTEAU OF THE ART WORLD.

Artist | Spain

When sculptor Jason DeCaires Taylor created the world's first submerged sculpture park off the coast of Grenada in 2006, he

deepened the concept of intervention in natural habitats and imagined a subaqueous testament to humanity's connection to the oceans. It was such a marvel that *National Geographic* named it a man-made wonder of the world.

Using marine-grade cement, sand, and microsilica—a mix of materials that can assimilate local species and eventually create artificial coral reefs—Taylor has since expanded his vision to the Mexican coast, where many of his installations are on display at the Museo Subacuático de Arte, an underwater museum that includes more than 500 sculptures. This year, though, his ambition became boundless: Ocean Atlas, his 18-foot-tall, 60-ton sculpture off the Bahamas, depicts a local girl holding the ocean on her shoulders. Modeled on the Greek Titan Atlas, the sculpture—made with pH-neutral materials—will ultimately transform into a fish- and coral-friendly artificial reef. "Instead of leaving my mark on the environment with my work," he writes in his 2014 book, *The Underwater Museum*, "the environment is leaving its mark on my work."

ALEXANDER PONOMAREV, NADIM SAMMAN

FOR DESIGNING A BLUEPRINT OF ANTARCTIC CULTURE.

Artist; curator | Russia; Britain and Germany

At this year's Venice Biennale of Architecture, artist Alexander Ponomarev and curator Nadim Samman debuted an Antarctica that was not the one of public imagination—that vast, unforgiving place inhabited by legions of penguins and a few thousand



Kara Walker's *A Subtlety, or the Marvelous Sugar Baby* featured a sculpture of a sphinx-like woman coated in sugar.

scientists in utilitarian metal buildings. Rather, the duo's vision of Antarctica was futuristic, beautiful, and hospitable.

Their project, "Antarctopia," the continent's first pavilion at the biennale, featured projects from a range of architects showing the artistic possibilities the southern-most continent might embrace. Sergiu-Radu Pop, a student of Pritzker Prize winner Zaha Hadid, for instance, designed a sleek facility that would rise seamlessly from the continent's topography and include space for both research and tourism. Another design showed a research station in the shape of a snowflake, covered with solar panels.

Antarctopia is an ongoing project. In 2015, scientists and artists will gather on vessels around Antarctica to explore the untapped, outer reaches and define a new culture "beyond institutional missions and national claims," as Antarctic's website puts it.



RITHY PANH

FOR ANIMATING THE PAINFUL GAPS IN CAMBODIAN HISTORY.

Filmmaker | Cambodia, France

Between 1975 and 1979, the Khmer Rouge was responsible for the deaths of some 2 million people and nearly annihilated Cambodia's rich cultural traditions. Rithy Panh, then a teenager, lost his parents, siblings, and other relatives. For Panh, now a film director, this period has been the focus of more than a dozen movies. Yet he struggled with how, on screen, he should resurrect his family, given how few images of the brutal era and its victims exist. His innovative solution was to represent them, and himself, with carved clay figurines set in tableaux intercut with available archival footage and audio recordings.

The resulting documentary, *The Missing Picture*, took home several film-festival awards in 2013 and an Academy Award nomination upon its public release this year. It is a tender, tragic narrative, showing tiny, hapless figures at the mercy of a cruel regime. "[A] brilliant

documentary ... equaled only by its soulfulness," the *New York Times* heralded. "[Panh] reclaims the very human individuality that the Khmer Rouge sought to obliterate."

SAM HOPKINS, KILUANJI KIA HENDA

FOR DECONSTRUCTING WESTERN AID TO AFRICA.

Artist; photographer | Kenya; Angola, Portugal

Each year, some \$30 billion in aid flows into Africa from developed countries. But the culture that surrounds this aid is often considered paternalistic, excluding Africans from the aid organizations themselves. Such was the message implied by Sam Hopkins and Kiluanji Kia Henda at the 2014 Dak'Art biennale in Senegal.

In "O.R.G.A.S.M. (As god wants and the devil likes it)," Kia Henda features a satirical NGO—the "Organization of African States for Mellowness"—that reverses the norm by sending aid from Africa to the West. Some of his photos capture

mock meetings led by European politicians, who are actual leaders photoshopped with African hairstyles. His work is a comment on the “financial machine called charity,” as the artist puts it.

Hopkins exhibited “Logos of Non Profit Organisations working in Kenya (some of which are imaginary),” a screen-print collection of genuine aid organizations’ logos intermixed with the artist’s fictional logos, leaving one to discern which are which and to contemplate the Western branding of charity. The UNESCO logo, for example, uses Greek columns. “This is the U.N. organization for world culture, so why should a classical European symbol stand for world culture?” Hopkins told a Kenyan journalist.

CAMILLE HENROT

FOR CHALLENGING HOW HISTORY IS TOLD.

Artist | New York City

The discipline of history takes on an impossible task: to condense the past, with its boundless complexity, into an archive. Camille Henrot’s work has captivated the art world by moving beyond that paradox and into new forms of storytelling.

As shown in her first comprehensive American retrospective, at Manhattan’s New Museum this summer, the French artist creates novel epistemologies from an array of media, including film, sculpture, and illustration. Henrot embraces science and scholarship, but brushes aside their hierarchies: In one series, she paid homage to the books in her personal library with an installation of Japanese *ikebana* floral arrangements, transforming written information and its presumption of immutability into pieces of ephemera. “Grosse Fatigue,” her best-known video work, earned Henrot recognition as the most promising young artist at 2013’s Venice Biennale. It swirls archival images and spoken-word creation myths—from Genesis to Navajo oral tradition—into a frenzied, digitized account of the

universe’s origins.

Henrot’s work insists that just as the past is limitless, so are the legitimate ways of interpreting and conveying it.



SILVER X

FOR REMIXING SOUTH SUDAN’S ANGUISH.

Singer | South Sudan

War had torn apart the life of 26-year-old South Sudanese singer Silver X. In early summer, civil war was sowing the seeds of famine while cholera swept the land, and the conflict between Nuer and Dinka fighters raged. The artist responded with “Let’s Stand Together,” an auto-tuned peace anthem that he wrote and recorded with 11 other singers from across the ethnic spectrum of the world’s newest country. It implored peace negotiators, “We need to stand together ‘cause that’s the only way we can win.”

Displaced by fighting in 2000, Silver X returned four years ago from a refugee camp in Uganda to be part of South Sudan’s budding music scene. In June, he turned his sights on the looming famine, helping to launch the campaign Music Against Hunger. “If leaders could see the youth of this country crying for peace, I thought things might start to change,” he told a reporter in August.

ANILA RUBIKU

FOR DEFACING DICTATORS.

Artist | Albania, Canada, Italy

Born in 1970, Anila Rubiku grew up in a communist Albania that she once called “the most absurd country in the world.” Today, national alienation is a pervasive

SHAMSIA HASSANI

FOR ENVISIONING A NEW URBAN PALETTE.

Graffiti artist | Afghanistan

Supply Shamsia Hassani with spray paint, and the lasting effects of Afghanistan’s war will be covered with street art. Her dramatic murals enliven wreckage and abandoned buildings in Kabul. In Afghanistan, where women have historically been oppressed, those murals run counter to stereotypes about the culture. In one, a woman draped in a bright blue burqa stands before a cityscape; in another, a woman holds a guitar, her flowered hair flowing in the wind. Hassani sometimes takes photographs of inaccessible sites in the city and paints the prints. These projects are part of a collection called “Dream of Graffiti,” and she has used the technique to transform a variety of areas around Kabul, including Darulaman Palace.

An Afghan born in Iran, Hassani is a professor at Kabul University, where she teaches art. This year, her graffiti got her shortlisted for the Artraker Award, which honors artists in war-torn places. “I want to make Afghanistan famous because of its art, not its war,” she told *Art Radar*.



theme in her art. A recent work, "Effacing Memory," features sketches of 12 dictators and members of their inner circles with their faces erased—stripping the men of their power. An accompanying video documents her almost violent erasures of their visages. She saved Enver Hoxha, the communist who ruled over her homeland for 41 years, for last.

In 2014 alone, Rubiku's work has appeared in museums and galleries in Belgium, Albania, Montenegro, and France. The artist crosses borders with equal frequency, ever attuned to the psychology of displacement. Her 2011 installation "Other countries. Other Citizenships" featured a collection of hats embellished with written passages intended to reflect the thoughts of immigrants acclimating to new cultures. "Exile," one reads. "It's not easy coming from nowhere when no foreign external condition compels us to."

HONG SUNG-DAM

FOR POKING AT POWER WITH A BRUSH.

Artist | South Korea

In one painting by acclaimed artist Hong Sung-dam, the democratically elected president of South Korea, Park Geun-hye, has just given birth to a baby resembling her late father, Park Chung-hee, the autocrat who led the country for nearly two decades prior to his 1979 assassination. In another, Park dances to Psy's "Gangnam Style" below a noose, symbolizing the many people hanged under her father's regime.

Precocious, yes, but Hong became even more confrontational shortly after the Sewol ferry sinking, which killed almost 300 people. Critics say a poorly equipped coast guard and a disorganized government response heightened the disaster. How did Hong see the president afterward? As a scarecrow controlled by her father, as he revealed in a collaborative work produced with other artists.

The Gwangju Biennale, one of Asia's most prestigious art exhibitions, often celebrates a spirit of freedom. But Hong's latest comment may have been too direct. This year, the biennale removed his painting under pressure from public officials "because of its explicit political intention," according to a vice mayor of Gwangju.

SHIGERU BAN

FOR BEING ARCHITECTURE'S FIRST RESPONDER.

Architect | Japan

When Shigeru Ban won a commission to design the Centre Pompidou-Metz, an art museum in northeastern France, he built himself a stylish studio at the museum's Paris branch—out of paper tubes. That's because Ban, who won the 2014 Pritzker Architecture Prize, thinks that in his line of work, frugality shouldn't preclude elegance or function.

Ban's commitment to simple materials—most famously, paper and cardboard—is the link between his high-culture

commissions and his widely praised humanitarian projects. Like other Pritzker laureates, Ban has designed spaces for fashion houses and art collections, but with cheap, recyclable materials, he has also designed temporary shelters, schools, and churches for natural-disaster survivors in places such as Haiti and the Philippines.

Ban thinks that architecture should both look and do good. "His is a restless inventiveness," the *New Republic*'s architecture critic wrote in March. "Empowered by the Pritzker, with its almost Nobel-Prize-like aura, Ban is positioned to have a profound influence on the profession and in the world."



The Aspen Art Museum opened its new building, designed by Shigeru Ban, in August 2014.

ART, SUBMERGED

Jason deCaires Taylor's creative process is driven by his ecological mission: to alleviate pressure on the globe's remaining coral reefs. The results of that effort are ethereal, underwater worlds in which time feels arrested and objects may appear magnified. Symbiotically, nature itself—the sea life that lives on and around the art—will gradually transform and embrace Taylor's work. To that end, the sculptor works with pH-neutral materials that actively promote coral growth, and he leaves rough patches on his sculptures' surfaces to make them hospitable to larvae. He forms his figures on dry land before placing them in the water. In the case of "The Silent Evolution," 400 statues were hoisted into the Caribbean Sea, where the artist expects them to remain, fostering marine regeneration for centuries to come.







Atlas, as a
Bahamian girl,
supports the sea;
flora and fauna
coat the art with
vivid colors in this
silent underworld.





The Moguls

BY NATURE, IT SEEMS, THE VISIONARIES OF THE BUSINESS WORLD

are always looking for "the next big thing." That can mean a new product that will make billions of dollars or a new way of delivering goods and services that will change the face of a sector. From Russia to China, Saudi Arabia to India, these Global Thinkers are doing anything but business as usual. They are revolutionizing e-commerce, welcoming women into long-unequal workplaces, bringing down the cost of medicine, making genetic sequencing available to the masses, and striking deals that undercut traditional East-West energy politics. Some of their aims are noble, and others not, but all are undoubtedly original.





JACK MA

FOR OUT-INNOVATING AMAZON.

Founder and executive chairman, Alibaba | China

Alibaba is not China's eBay, its Amazon, or its Wal-Mart, but something entirely new: a conglomerate that includes China's largest business-to-business trading platform, its largest consumer-to-consumer retail trade site, and other trading websites that together dominate e-commerce.

Jack Ma, who founded Alibaba in his apartment in 1999, possessed not only the tenacity and managerial brilliance to build a large company, but the vision to synthesize proven technology—what places such as Yahoo, a major investor, had already established—with new ideas: provide credit rating and escrow services, and prioritize customers and employees over shareholders.

Alibaba's late-September initial public offering, which raised roughly \$25 billion, was the largest in history and made Ma the richest man in China. The company's market capitalization at press time—\$271 billion—makes it worth more than Amazon. Ma's philosophy? Learn from your competitors, but "copy and you die."

Jack Ma's first job was as an English teacher. He once tried—and failed—to get a job at KFC.

GENNADY TIMCHENKO

FOR NAILING THE ENERGY DEAL OF THE DECADE.

Russian oilman | Switzerland

It's no surprise that Russian President Vladimir Putin considers Gennady Timchenko, as the tycoon himself puts it, "our main man for China." In May, the billionaire Russian oilman secured Moscow a 30-year, \$400 billion gas deal with Beijing. Negotiated in the heat of the Ukraine crisis, the blockbuster deal saved Russian energy giant Gazprom from a serious bind: Europe, not exactly thrilled with Russian expansionism, had been the company's only major client. The deal was a turning point for bilateral relations. China shored up its energy security while Russia set the stage for a new era of lucrative trade with its eastern neighbor.

But the year wasn't without hazards for Timchenko. In March, he was hit with U.S. sanctions for being a close associate of Putin, and he has sold off stakes in companies to protect them. (Timchenko reportedly lost \$1.8 billion of his roughly \$14 billion net worth due to sanctions.) Yet thanks to the gas deal, Gennady seems to be on Putin's good side—which, in Russia, can make all the difference for a person's future prospects.



KIRAN MAZUMDAR-SHAW

FOR INSISTING THAT GOOD HEALTH CARE SHOULDN'T BREAK THE BANK.

Chairperson and managing director, Biocon | India

Kiran Mazumdar-Shaw started Biocon out of a garage in 1978. Thirty-six years later, her company is India's biggest biotechnology firm, and Mazumdar-Shaw is the country's richest self-made woman. Now she is using her position to expand access to affordable health care among India's 1.2 billion people.

This year, Biocon launched CANmab, a breast-cancer drug 25 percent cheaper than its nearest competitor. In India, where around 150,000 people are diagnosed with breast cancer each year, Biocon's drug should significantly expand access to lifesaving treatment. CANmab is only the latest in a string of accessible health-care projects: Mazumdar-Shaw funds an affordable cancer-treatment center, underwrites a health-insurance program for rural residents, and has promised to donate three-quarters of her \$1.2 billion fortune to charitable causes.



LEI JUN

FOR SHAKING UP CHINA'S MOBILE MARKET.

Co-founder, Xiaomi | China

Lei Jun wears a black shirt and blue jeans like Steve Jobs did, and much of his phone's design shares similarities with Apple products. But the ideas behind his sales and marketing edge are anything but imitative.

His brilliance? "Instead of brandishing phones' high-cost luxury appeal like that Cupertino company," *Fast Company* wrote in February, Lei "sells them in buzz-generating flash sales at razor-thin margins, then takes advantage of revenue streams provided by software." Lei's cell-phone company, founded in April 2010, has passed Samsung to become China's leading cell-phone vendor, claiming 30 percent of the country's market share in this year's third quarter.

Xiaomi, which didn't release its first smartphone until 2011, is already planning to expand into foreign markets, including Russia, Brazil, and Mexico, later this year.

ARUNDHATI BHATTACHARYA

FOR TELLING HARD TRUTHS ABOUT INDIA'S DEBT.

Chair, State Bank of India | India

While the money of a few corrupts America's politics, the money of many corrupts India's. As chair of the State Bank of India, overseeing \$400 billion in assets, Arundhati Bhattacharya is aiming to bring greater discipline to the country's banking system.

A tried-and-true tactic by politicians before Indian elections is to promise to waive sometimes billions of dollars in farm loans in an effort to win the votes of the rural poor. The practice discourages farmers from repaying their loans—

leading to more bad debt and macroeconomic inefficiencies: If banks must waive bad loans, it hampers their ability to price risk. To fight this scourge, in July Bhattacharya called out the newly elected leaders of the states of Andhra Pradesh and Telangana for their proposed policies on debt forgiveness, and she has suggested (politely) that Prime Minister Narendra Modi's government turn away from waiver policies. Yes, she admits, this would benefit her bank—but it would greatly benefit India as well.

REEMA BINT BANDAR AL SAUD

FOR CATERING TO THE KINGDOM'S WORKING WOMEN.

Princess, corporate executive | Saudi Arabia

More than half of Saudi Arabia's university students are female, yet women make up less than a fifth of the country's workforce. Princess Reema Bint Bandar Al Saud, CEO of the Saudi luxury retailer Alfa International, is working to tip the balance.

At the Riyadh branch of luxury department store Harvey Nichols, Princess Reema has hired dozens of female salesclerks, created in-house day care, and provided transportation stipends to female employees over the past three years. It's an encouraging model for female hiring in Saudi Arabia—one that not only introduces women to work outside the home, but also helps them integrate their private and professional lives. As Saudi women inch their way into the private sector—this year saw the opening of the country's first female-run law firm and the promotion, for the first time, of a woman to the top editorial position at a daily newspaper—Princess Reema's high-profile example could lead the way to gradual but profound changes far beyond the workplace.



JAY FLATLEY

FOR OFFERING A DISCOUNT ON GENETIC PROFILES.

CEO, Illumina | Rancho Santa Fe, Calif.

In January, Jay Flatley's Illumina, the leader in genetic-sequencing technology, unveiled a system that will sequence a human genome for less than \$1,000, making far more affordable a process that has typically cost around \$10,000. The device, called the HiSeq X Ten, completes sequences faster and more accurately than previous designs. It sells for about \$10 million and could be a game-changer, allowing doctors new insights into diseases even before symptoms start.

Under Flatley's leadership, which began in 1999, Illumina has grown to claim about 80 percent of market share. Sequencing for all is a goal close to the CEO's heart. "We believe that someday everybody's going to get sequenced," Flatley said in a 2013 interview with a San Diego newspaper. Lowering the price places that goal within reach.

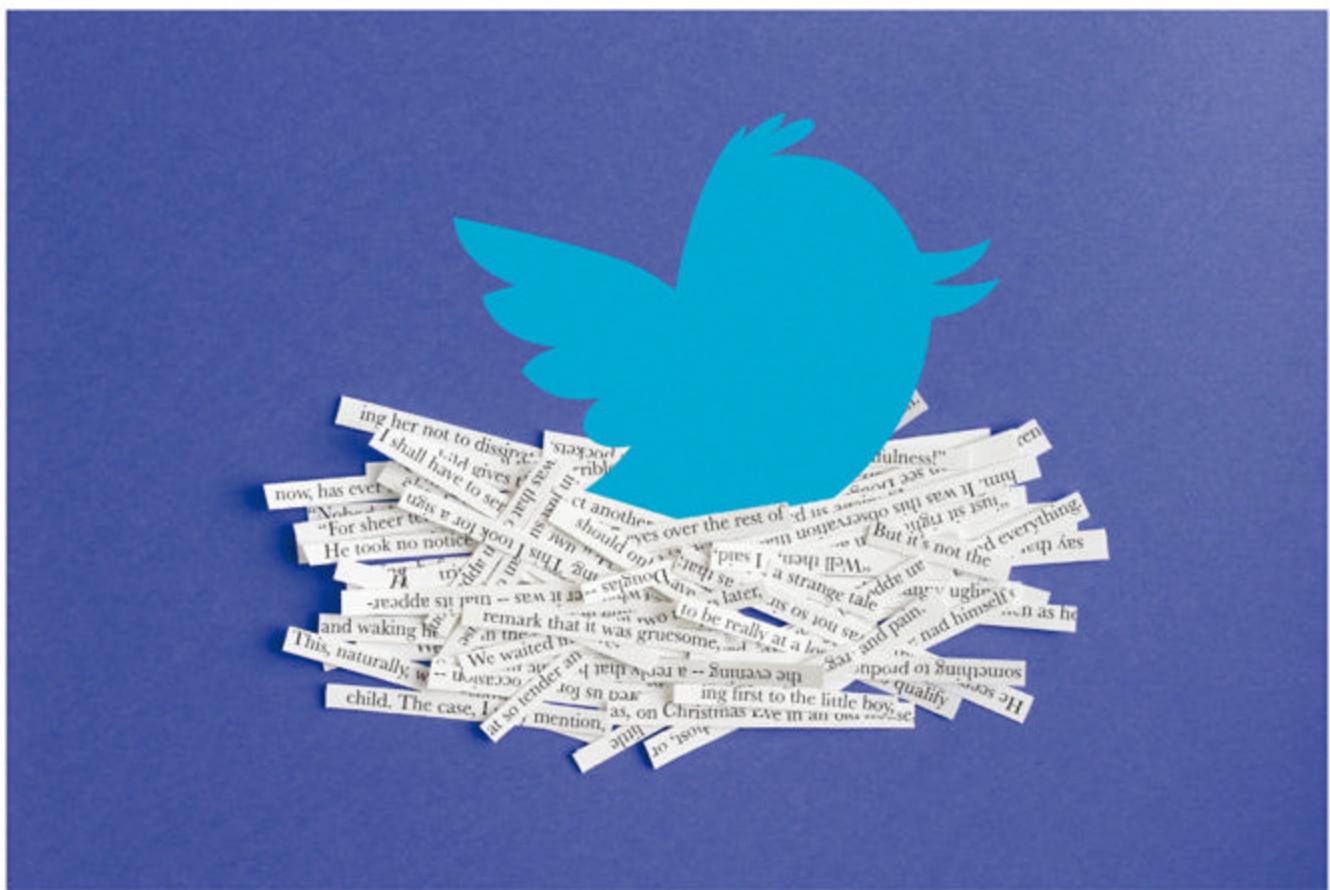


Character Development

It's been touted as a revolutionary platform for expression, but does Twitter literature really have a future?

By Ruth Franklin

Illustrations by Maayan Pearl



THE TWITTER FEED OF

T American novelist Elliott Holt usually includes remarks on what she's reading, retweets of friends' book news, and occasional political commentary. But one night a mystery unfolded there. As Holt's followers watched, she retweeted the feeds of three guests at a swanky party in SoHo. Each one encountered a red-haired woman and tweeted about her odd behavior:

@ElsaJohanssen: ummm a woman with red hair just sucked down three cocktails in a row. now she's dancing like a maniac. #wtf

@MargotBurnham: Red haired woman has had way too much to drink. Those cocktails go down too easily.

@SimonSmithMilla: Woman with ginger hair is doing a show. What is this, Flashdance?

Later that night, the redhead fell to her death from the roof, letting out, according to @SimonSmithMilla, "A scream so infernal I wasn't sure it was human."

Afterward, the guests' Twitter feeds were cited as evidence of what had happened. But was the incident a suicide, a murder, or simply an accident?

None of the above: It was fiction. Holt, along with some 30 other writers around the world, was participating in Twitter's first Fiction Festival, an event launched two years ago this fall to promote creative

uses of the popular microblogging platform. In addition to Holt's murder mystery, readers could follow, among others, a nanny in a fictional White House tweeting about her eerie visions (an updating of Henry James's *The Turn of the Screw*) and a "memoir in Tweets" by a fictional English B-movie star. Although much of the material seemed promising, the festival felt a little below the radar. While book-lovers could follow online from anywhere in the world, a sparsely attended meet-up anchored the event at that print bastion, the main branch of the New York Public Library. There, writers, editors, and readers milled around as tweets were projected onto TV screens. The same question appeared to be on everyone's mind: Is this stuff to be taken seriously?

With its 140-character limit, Twitter wouldn't seem an obvious outlet for narrative experimentation. Although it was conceived as a way for people to broadcast brief status updates, it caught on primarily as a means for users to connect with each other. Worldwide, there are currently around 650 million Twitter users who send a collective 500 million tweets each day. (In 2010, the U.S. Library of Congress appointed itself custodian of this output, preserving every public tweet in a digital archive.)

Yet tweeting has permeated the popular culture so deeply that the concept of Twitter literature was inevitable. Today, writers around the world such as Jennifer Egan, David Mitchell, and Teju Cole are producing original works on the platform. Even best-selling British writer Philippa Gregory, whose historical novels range in focus as far back as the 15th century, created a fictional feed for one of her characters. If Twitter literature started out as a scrappy affair, it is now moving rapidly into the mainstream. "Twitter is where the world tells its stories all day, every day" was the slogan for this year's Twitter Fiction Festival, which featured work by popular authors such as Rhodesian-born British detective novelist Alexander McCall Smith and American thriller writer Brad Meltzer. In an interview with *Fast Company*, Andrew Fitzgerald, the Twitter media guru who has spearheaded the festivals to date, proclaimed Twitter "the ultimate canvas for creative storytellers." For those who might think he's getting a little carried away, *New Yorker* staffer Ian Crouch recently speculated that the next Great

Rather than a new path for the novel, what Twitter offers is a platform for an increasingly sophisticated form of literary performance art.

American Novel could be in the works on Twitter.

New forms of writing are indeed made possible by Twitter's unique dynamics: namely, the flow of tweets in real time. And, certainly, moments of literary beauty and wit are to be found on Twitter. While many writers seem primarily attracted by the platform's casual immediacy, others have been galvanized by the possibility of creating ambitious works fundamentally different from anything on the printed page. But their experiments show that rather than a new path for the novel, what Twitter offers is a platform for an increasingly sophisticated form of literary performance art. Whether it works as literature, as we understand it, is another question.

ONE MIGHT THINK THAT A WRITER WOULD MOST naturally use Twitter to unspool a narrative gradually, moment by moment. But when some novelists, including Egan, Mitchell, and McCall Smith, have tried to put this method into practice, the results have been mixed. Egan's short story "Black Box," which appeared in the June 4, 2012 issue of the *New Yorker*, was tweeted from the magazine's @NYerFiction handle for an hour every evening for 10 days. Egan had been wondering "how to write fiction whose structure would lend itself to serialization on Twitter," she told the magazine's *Page-Turner* blog. She came up with a lengthy sequence of single-sentence paragraphs, many coming in well under the 140-character limit, that amounted to a kind of handbook for a female spy in the future. Although she wrote the story by her usual method—in a notebook, by hand—its format as a step-by-step primer seemed

suited to tweeted installments. "People rarely look the way you expect them to," the story began (31 retweets). "If you're having trouble perceiving and projecting, focus on projecting" (10 retweets).

"Necessary ingredients for a successful projection: giggles; bare legs; shyness" (16 retweets). "The goal is to be both irresistible and invisible" (38 retweets).

Some readers enjoy watching these sorts of stories unfold, but others don't—and for good reason. They find that Twitter is "a clunky way of delivering fiction," as Sarah Crown, a former *Guardian* editor, complained on that newspaper's *Books* blog in response to "Black Box." (Crown also did not appreciate that a reader in Britain would have to stay up past midnight to follow Egan's live tweets.) In addition, there's the difficulty of assembling all the pieces later: If the tweets aren't sequenced by an external site such as Storify, good luck finding them again.

There are other reasons it doesn't work to tweet a linear story line by line. Deep, immersive reading suspends time, but attempting to follow a live narrative on Twitter makes readers hyperaware of the down time between tweets. David Mitchell's story "The Right Sort," about a boy high on his mother's Valium, suggests that the way Twitter filters experience is similar to the effects of the drug: "The pill's just kicking in now. Valium breaks down the world into bite-sized sentences. Like this one. All lined up. Munch-munch." It's hard not to read those lines as a comment on our collective addiction to repeated pings of new information. But the British novelist also finds poetry in Twitter's fictional constraints. He compares the Twitter "straitjacket" to the playful restrictions employed by the French experimentalist Georges Perec, who wrote an entire novel without using the letter "e." Each tweet, Mitchell has said, ought to be a "balanced entity," as compact and elegant as a haiku.

Yet despite his idealistic intentions, Mitchell's story, like Egan's, was defeated by the mechanics of the Twitter platform. As one *Washington Post* critic noted, readers who followed Mitchell's story were "either catching stray sentences in their social media feeds, or ... scrolling, scrolling, scrolling to read all of @david_mitchell from top to bottom." The natural momentum of the platform, which allows readers to move both forward and backward, can actually work against

serialized literature. It is true that the medium's unpredictability may generate an innate suspense: A user following from the beginning of a story must wait for each new passage of text to arrive. "The idea of installments is a very good idea," McCall Smith remarked sanguinely of his own serialization efforts in an interview with the Australian Broadcasting Corporation, because "everybody's left wondering what's going to happen next." But that's not how it works for most readers—those who join the stream in the middle of the sequence or after it has already ended. Those users are forced to scroll back to the opening of the story, experiencing the tweets in reverse sequential order. There's no better way to ruin suspense than to read the ending first.

While McCall Smith has touted serialization as a "standard way of writing" for authors from Charles Dickens to Leo Tolstoy, it gained popularity in Victorian times as a way to sell newspapers, not as a spur for fictional experimentation. And, at any rate, newsprint is static, not a fluid medium. Rather than adding literary value to a story that's intended to be read as a

whole, serialization on Twitter seems nothing more than the latest way for authors to augment their readerships and market themselves. Even Twitter itself has gently discouraged would-be fiction writers from serializing. "We love fiction that uses Twitter functionality in the most creative way possible," the guidelines for the most recent Fiction Festival read. "That means perhaps something more than just tweeting out a narrative line-by-line."

For Nigerian-American novelist Teju Cole, that "something more" has taken a variety of forms. First was a series of self-contained stories within the constraints of 140 characters, akin to the famous short-short story often falsely attributed to Ernest Hemingway: "For sale: baby shoes, never worn."

@tejucole: Ude, of Ikata, recently lost his wife. Tired of arguing with her, he used a machete.

@tejucole: Arrested for theft in Mecca, the Nigerian immigrant Ibrahim is now learning to use his left hand.

@tejucole: Prince Monday Whiskey was, on Monday, whisked away by persons unknown.

Cole's project "Small Fates," which ran from 2011 to 2013, was inspired by the genre of *faits divers*, piquantly brief crime stories popularized by French periodicals around the beginning of the 20th century. He combed Nigerian newspapers for tales of especially resonant crimes and retold them in single tweets. Like epigrams, his tweets relied on careful word choice and devices such as rhythm, alliteration, and puns. Twitter's enforced compression often heightened the irony: "With a razor blade, Sikiru, of Ijebu Ode, who was tired of life, separated himself from his male organ. But death eluded him." Each tweet stood on its own, as Cole explicitly declined to weave them into a larger narrative.

"Most see [Twitter] as a sort of ephemeral and unworthy venue," Cole told Matt Pearce of the *New Inquiry*. "My view is: That's where the people are, so bring the literature to them." The people responded, and Cole became one of the more popular highbrow authors on Twitter, with around 168,000 followers. Although he is

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currently taking a break from tweeting, as he recently told FOREIGN POLICY, his reputation as a Twitter innovator could only have helped with the promotion of his novel *Open City*, which came out around the time he began “Small Fates.” But the novel, while brief, is discursive and ruminative, written in a style very different from Cole’s Twitter voice. In other words, he seemed to have discovered a way to use Twitter not as a delivery system for the kind of fiction he had been accustomed to writing, but as an impetus to create something entirely new.

Finishing “Small Fates” freed Cole to try out yet another method of using Twitter. In January 2014, he disseminated a story called “Hafiz,” composed as a series of tweets, to a number of friends who had agreed to tweet the work. Cole then retweeted the story, line by line, so that the narrative appeared in sequence in his own feed. The effect was choral, as if each storyteller stepped out of the Twitter cacophony, spoke his or her designated line, and then disappeared back into the din:

@AfricanCeleb: The seated man was closer to sixty than to fifty, dressed in an ordinary way, a button-down long-sleeved shirt, trousers.

@seyitaylor: His right hand was inside his shirt. He clutched at his heart and winced.

@pushingoops: The young man with the phone said, “He’s having chest pains. Earlier he said he was having chest pains.”

In March, Cole published a long narrative essay, “A Piece of the Wall” (“POTW”), about a visit to the U.S.-Mexico border in Arizona. For this hybrid work of literary journalism, he incorporated the voices of people he interviewed, assigning a Twitter handle to each. This is how he represented his dialogue with a courtroom security guard:

@potw_Teju: @potw_Bernie Are you, yourself, from a Mexican family?

@potw_Bernie: @potw_Teju My father didn’t fight for this country in World War Two so that people could call me Mexican.



@potw_Teju: @potw_Bernie But the chains: these men are not dangerous. Why the chains?

@potw_Bernie: @potw_Teju It’s more convenient.

This dialogue illustrates one of Twitter’s defining characteristics: its default mode is public. Conversations usually take place out in the open, where anyone can listen. Its literary analogue isn’t the Proustian genius sealed in his chamber; it’s an open-mic poetry slam, with the audience constantly interrupting to clap or boo. While Cole’s recent efforts mimic this interactivity, they function effectively as literature because they do not actually surrender to it. In selecting and arranging the tweets to suit his purposes, he remains the puppeteer behind the scenes—as he must.

A few writers have gestured toward the idea of responsive fiction on Twitter, notably best-selling fantasy author Andrea Cremer (@andreacremer), who responded to comments from her roughly 16,000 followers as she tweeted a story about a person who finds a mysterious unopened letter in an attic. But all serious fiction has to be hermetic, because writers must maintain control over their work. Imagine Tolstoy, while tweeting *Anna Karenina*, taking reader suggestions regarding his protagonist’s fate: Send her back to her husband! No, throw her under the train!

TWITTER LITERATURE AS A PHENOMENON MAY

be gaining popular traction, but is the quality of the fiction keeping pace? Some regard Elliott Holt’s Manhattan murder mystery, from the original Twitter Fiction Festival, as the most creative use yet of the platform. Unlike the writers who serialized work designed for the page, Holt was a regular Twitter user when she wrote her story, and she created it with the medium in mind: “the way it unfolds in real time, the performative nature of tweets, the hashtags and irony, even the typos,” she told *BuzzFeed* this year. American author Chris Arnold recently did something similar with his piece “#PolarVortex,” which depicts the fictional @NEX_Airport in the throes of a winter storm. Public relations tweets from fictional airlines and ads for the airport’s sushi bar mingle with the stories of stranded passengers and crew members—one anxiously en route to a job interview, another watching his relationship fall apart via text. With a nod to the increasing use of Twitter as a means for sharing images, Arnold’s narrative takes advantage of the platform’s visual capabilities, collaging weather maps, photographs, and video in his feed.

To a person familiar with Twitter, these projects are fascinating. But the thrill they provide is primarily that of seeing a recognizable world faithfully duplicated, with all its attendant conventions and idiosyncrasies. So far, the most successful works of fiction on Twitter have been compelling precisely in re-creating the experience of being on Twitter. They feel clever and timely, but



Jen Burney

Dr. Burney is an environmental scientist focusing on global food security and climate change. She designs technologies for poverty alleviation and agricultural adaptation, and studies the links between energy poverty and food security. She teaches classes on food security and quantitative methods.



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Dr. Zhang is an environmental economist focusing on climate change, water resources, renewable energy and fisheries, with a particular interest on East Asia.

Zhang teaches classes on sustainable development and Chinese environmental and energy policy.



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Dr. Walter is an expert on international security, with an emphasis on internal wars, bargaining and cooperation, and terrorism/counter-terrorism.

Walter teaches classes on international politics and security and policy responses to global problems.



David Victor

Dr. Victor directs the Laboratory on International Law and Regulation (ILAR) at IR/PS.

His research focuses on energy markets in emerging countries and environmental regulatory law. Victor teaches energy policy, international law, and climate change courses.



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they do something fundamentally different from what novels and other ambitious works of fiction are meant to do. Novels show us something of how the world works. Twitter fiction, so far, has been best at showing us how Twitter works—hashtags and all.

More importantly, the way we experience Twitter is fundamentally different from the deep engagement that takes place when we read immersive fiction. A tweet is so brief that it can be consumed at a glance; conversely, a user can spend hours scrolling through the always-fluctuating stream of words and images, eyes flickering from nugget to nugget. Researchers, such as Maryanne Wolf at Tufts University, have confirmed what everyone who reads on a screen intuitively knows: that the choice to read a text on paper or plasma has a profound impact on the way we experience it. We use various cognitive processes as we shift back and forth between paper and screen. Our brains are adaptive and plastic throughout our lives, so excessive screen reading can cause our deep-reading skills to atrophy and our comprehension, in particular, to slack off. We wind up skimming through

If we are doomed to end up reading novels the way we read Twitter, it doesn't follow that we read Twitter the way we read novels.

the paperback in our hand the same way we allow our eyes to wander in and out of our Twitter feeds. But if we are doomed to end up reading novels the way we read Twitter, it doesn't follow that we read Twitter the way we read (or used to read) novels—deeply, empathically, creatively. The feed simply does not lend itself to that kind of reading experience.

What it does lend itself to—even more

so than conventional literature—is conveying short bursts of beauty. American novelist and food critic Ruth Reichl (@ruthreichl) tweets about her meals and daily routine in language that veers into poetry: “Deep misty morning. Landscape erased. Warm peach cobbler. Splash cream. Black coffee. Waiting for the fog to clear.” Pentametron (@pentametron) is a bot that finds tweets written in iambic pentameter—almost always unintentionally—and matches them with others that rhyme, pairing strangers in odd duets. “Put fear aside and be yourself today,” tweets a life coach in Cape Town, and a guy who identifies himself only as @young_hittah718 responds with the Nikki Minaj lyrics “a million, billion, trillion miles away.”

Is it great literature? Of course not. But it's a new way of making sense out of the stories the world tells all day, every day—which is what writers have always tried to do. ♦

Ruth Franklin is a contributing editor at the New Republic and the author of A Thousand Darknesses: Lies and Truth in Holocaust Fiction. She is at work on a biography of author Shirley Jackson.

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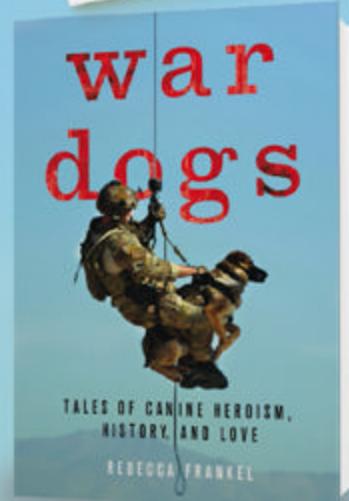
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<< CONTINUED FROM PAGE 112 In researching my book *National Insecurity*, I looked at 10 of the most prominent think tanks in Washington over a period of a decade. These organizations produced almost 12,000 events, papers, and research reports over that time. Of these, the vast majority concentrated on just a few topics—such as the Middle East, the war on terror, and China—linked closely to whatever was in the headlines at the time. Other areas, deserving of focus but outside the “buzz zone,” got much less attention. The areas that got by far the least coverage? Science and technology—never mind that they are responsible for most of the changes redefining life on the planet and many of the emerging threats with which humanity is grappling.

In short, the city most in need of big, new ideas may be home to the most dumbed-down smart people of all. Combine a lack of creative thinking, organized stupidity like the war on science, and political paralysis, and you get today's Washington, sleepwalking into America's future. A symptom of this problem is seen in FOREIGN POLICY's list of the Leading Global Thinkers of 2014. Of the people we

selected—each of whom had to meet our criteria of generating an idea or series of ideas that actually resulted in actions influencing people's lives, whether positively or negatively—precisely two work in Washington, D.C., and neither of them works in the U.S. government.

Now, I'll admit this is a subjective list. We pick who is on it, and hard choices are involved when looking at well more than 100 possible candidates. But candidly, this year, when it came to Washington, there just weren't that many choices. At the moment, the Beltway is pretty close to brain-dead, especially according to our criteria. That's not to say people in D.C. did not take actions that affected many people; but when they did, those actions did not flow from new thinking or anything remotely like a big idea.

The good news is that there are many thinkers out there who deserve the recognition we hope our list brings—for challenging convention, stimulating thought, improving lives, disrupting the status quo. They are scientists, engineers, designers, artists, writers, leaders, politicians, and more who show that America is finding ways to flourish

without Washington, and that the world is doing likewise. There are bad guys too—offering up bad ideas and translating them into bad acts—who show that, without strong leadership and ideas in Washington, the world may find itself at greater risk for tumult and chaos.

Before the anti-government types start saying it was ever thus, let's not dismiss the impact of the birth and growth of American democracy; the push westward fostered by federally sponsored expeditions, such as that of Lewis and Clark; the abolition of slavery; the cultivation of national infrastructure; the space program; the Internet; and a host of other things that, if not exclusively born of Washington, were at least nurtured there. When Washington has been a source of creativity, America and the world have benefited greatly.

The absence of Washingtonians on our Global Thinkers list isn't just a reflection of the fact that we think America's capital has hit a new low or that we worry about how that low is linked to the broader dumbing-down trend limiting America. Rather, we are also casting light on the situation in the hope that it triggers a discussion about how Washington must change. It is high time for America to identify and work to reverse the developments that have led to the quashing of imagination in Washington. This work includes bringing new perspectives to a city that has far too many lawyers and lobbyists and not enough scientists, technologists, entrepreneurs, and other creative thinkers.

The world certainly does not always need Washington to function, even thrive—the past few years have proved that. But it is clearly better off when the business of Washington is driven by new ideas rather than when, as seems to be the case today, it is stunted by fear of them. ♦

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The Dumbing Down of Smart—and Washington

By David Rothkopf

Illustration by Matt Chase

Americans have an uncomfortable relationship with smart. They are perfectly happy to celebrate genius, provided it doesn't make them uncomfortable or require too much of them.

They are more concerned that their children get into college than they are that those kids are graded against the kind of tough standards that might ensure understanding of important concepts. Once in college, students often really have to screw up to get a D or an F. I taught graduate school for a number of years, and I practically had to alert psychological counselors if I gave anyone anything below a B.

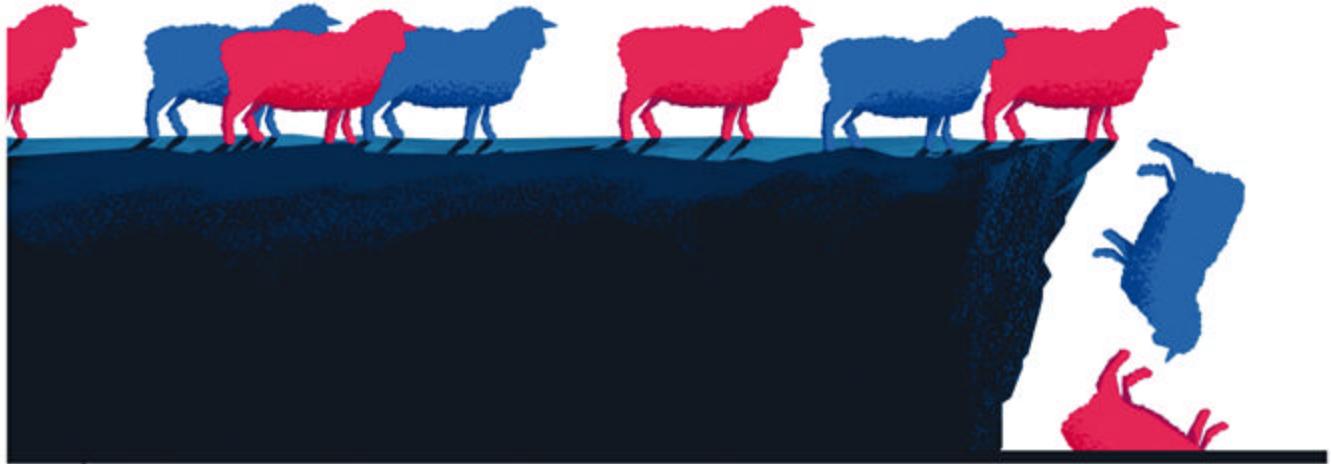
This phenomenon was once described as "the dumbing down of America." And in recent years, the trend has accelerated. One particularly odious element of it is what might be called pop intellectualism. Big, buzzy ideas are boiled down into short books that provide more cocktail-party conversation than significant concepts that require a little work to grasp. Think *The Tipping Point* and *The Black Swan*. (For real heavyweights, there's always the biography of Steve Jobs or recent, popular volumes by Thomas Piketty and Henry Kissinger to leave on the coffee table and make an impression. Because let's be clear, more people buy these books as fashionable accessories, not for what's on their pages.)

Worse still is the whole TED talks phenomenon, which offers the intellectual equivalent of diets in which someone can lose 10 pounds in two weeks without giving up ice cream sundaes or pizza. In just 18 minutes, a person can be exposed to breathlessly earnest genius—a slickly marketed brand of chicken nuggets for the brain. The talks enable non-scientists and non-technologists to feel smart, but that is not the same as actually being smart or,

alternatively, feeling dumb in the way that hard ideas sometimes make you feel—and should—when you first encounter them.

Perhaps worst among the consequences of the dumbing down of America is the hyper-politicization of discourse. This has led to the rise of media outlets and debates that are tailored to specific audiences who seek out viewpoints that support already-held beliefs. (The notion that beliefs are more important than actual knowledge is a byproduct or perhaps a driver of all this.) So people watching or reading the news tend not to see both sides of any issue—much less issues that have more than two sides. Litmus tests and the ability to articulate already-popular views are valued more than what is really new or challenging.

Unsurprisingly, this trend's impact on creativity and imagination in Washington—the epicenter of political polarization and the wellspring from which all litmus tests flow—has been particularly egregious. In the policy community, people who may wish to do more than tailor ideas to pre-existing, polled audiences have discovered that in doing so they run the risk of offending someone on Capitol Hill who might not vote to confirm them in top jobs were they ever to want them; that is to say, originality is not only frowned upon, but it is actually institutionally quashed. Thus, far too little bold thinking goes on in the country's think tanks. It is safer to write an article that doesn't offend than it is to write one that actually breaks new ground. The result? Journals that are exercises in reputation management. The bland leading the bland. [CONTINUED ON PAGE 111 >](#)



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